

Howard,

Attached is the flow model schematics for SA duct turning vanes. We still need to complete the details associated with supporting the vanes in existing ducts however this should be sufficient for your use in obtaining budget pricing on materials and installation

Regards,  
Sal

-----Original Message-----

**From:** Salvatore Ferrara [mailto:sal@advancedburner.com]

**Sent:** Monday, February 02, 2004 5:59 PM

**To:** Phil Hailes

**Cc:** James Nelson; Chuck Onaitis (chuck@advancedburner.com); Joel Vatsky (joel@advancedburner.com)

**Subject:** IPSC Contract 04-45606

Phil,

Attached are two files. L-04-ABI-07 contains ASC's letter and secondary air duct flow profiles that compare the baseline case (existing duct configuration) and design case (turning vane modifications). The other file contains the detail schematics of the design case modifications (duct turning vane additions).

The model shows that significant improvement in flow distribution can be achieved in the existing Secondary air ducts and would be necessary to evenly distribute air to each of the burner windboxes. Note that due to the additional weight of the turning vanes, the ducts may require additional supports and evaluation of the existing support system would be necessary prior to implementing these changes. The SA duct support system review and duct turning vane materials are not currently in ABT's scope however we can provide these if requested.

Our next step is to model the burner windbox to determine turning vanes/baffles necessary to distribute flow equally between burners. ABT will be supplying the turning vane/baffling, upon completion of the modeling, for installation in the burner windboxes.

Please review the attached and advise should you wish to discuss these results in more detail.

Regards,  
Sal

**ADVANCED BURNER TECHNOLOGIES**

271 Route 202-206

P O Box 410

Pluckemin, New Jersey 07978

Phone 908-470-0470; FAX 908-470-0479

**DRAWING TRANSMITTAL****CONTRACT 04-45606****Burner Field Assembly****February 18, 2004****TO:** Phil Hailes**FROM:** Sal Ferrara

<b>CODE</b>	<b>DRAWING NUMBER</b>	<b>REV</b>	<b>DRAWING TITLE</b>
2 5	03008-100-A02-D0	2	IGS UNIT 2, FIELD ASSEMBLY
2 5	03008-100-A03-D08	1	AIR REG. CROSS-OVER SUPPORT END GUIDE
2 5	03008-100-A03-D17	-	MOUNTING SPACER ANGLE
2 5	03008-500-A02-D0	1	HORIZONTAL FUEL DISTRIBUTOR ASSEMBLY

**NOTE:** Enclosed for your information and use during field installation are 3 sets of the listed burner drawings. Revisions were made to reflect the assemblies as they are shipping. The Mounting Angle (Item 16) is shipped loose and is required for replacement of the rolled ring (Item 10) ring that was shipped tacked to the burner front plate. The drawing installation instructions were revised to reflect this change.

Please advise should you have any questions on these drawings.

**CODE**

- 1 FOR REVIEW
- 2 FOR ISSUE
- 3 FOR INFORMATION
- 4 FOR COMMENT
- 5 FOR MANUFACTURE
- 6 OTHER

D:\IGS03\IGS03-04 Unit 2 Burners(03-96033-00)\ABT Burner Drawings\Revised Drawings 02-18-02\IPSC 2-18-04.doc

**IP7\_027639**





## 1.0 GENERAL STATEMENT

This Specification defines the procedures and requirements for handling the equipment furnished by Advanced Burner Technologies

## 2.0 Description of Work

2.1 Following is a brief description of the methods required to handle components furnished and manufactured by Advanced Burner Technologies.

The components supplied by Advanced Burner Technologies are typical of power plant equipment and do not require special care or procedures.

Personnel experienced with this type of equipment should be employed to unload and to move the hardware within the power plant. Large components, such as complete burner modules, will be equipped with lifting lugs, but can be handled with non-metallic slings. Tight hitches should be avoided.

### 2.1.1 Burner Components

Use lifting lugs when supplied, otherwise use non-metallic straps for handling. Keep slings away from the sliding sleeve damper, linkages, and actuator rods.

### 2.1.2 Ducts & windboxes

Lifting lugs can be field welded to duct or windbox components. Care should be exercised in handling these components since they are large, unwieldy and can be heavy.

### 2.1.3 Water wall panels

Water wall panels will be equipped with lifting lugs.

Prevent damage to the tube caps during handling in the storage yard.

2.2 Equipment supplied by Advanced Burner Technologies, but designed and manufactured by others.

This includes such items as igniters, flow elements, transmitters, control panels, fuel trains, and blower skids. These items should be handled with care. Instructions will be provided by the specific equipment designer.

**ADVANCED BURNER TECHNOLOGIES**

271 Route 202/206

P O Box 410

Pluckemin, New Jersey 07978

Phone: 908-470-0470, FAX 908-470-0479

**DRAWING TRANSMITTAL****CONTRACT 04-45606****SA DUCT TURNING VANES****FEBRUARY 23, 2004****TO:** Phil Hailes**FROM:** Sal Ferrara

CODE	DRAWING NUMBER	REV	DRAWING TITLE
2, 5	03008-800-A01-MK1	-	TURNING VANE MK1
2, 5	03008-800-A01-MK2	-	TURNING VANE MK2
2	03008-800-A01-MK5	-	TURNING VANE MK5
2	03008-800-A01-MK6	-	TURNING VANE MK6
2, 5	03008-800-A01-D01	-	TURNING VANE MK1 PL-1
2, 5	03008-800-A01-D02	-	TURNING VANE MK 2 PL-5
2, 5	03008-800-A01-D05	-	TURNING VANE MK 5 PL-11
2, 5	03008-800-A01-D06	-	TURNING VANE MK6
2, 5	03008-800-A01-D08	-	MOUNTING PLATE PL-2
2, 5	03008-800-A01-D09	-	MOUNTING PLATE PL-3
2, 5	03008-800-A01-D10	-	MOUNTING PLATE PL-4
2, 5	03008-800-A01-D14	-	TURNING VANE MK2 PL-6
2, 5	03008-800-A01-D15	-	TURNING VANE MK2 PL-7
2, 5	03008-800-A01-D16	-	MOUNTING PLATE PL-8
2, 5	03008-800-A01-D17	-	MOUNTING PLATE PL-9
2, 5	03008-800-A01-D18	-	MOUNTING PLATE PL-10
2, 5	03008-800-A01-D21	-	MOUNTING PLATE PL-12
2, 5	03008-800-A01-D22	-	MOUNTING PLATE PL-13
2, 5	03008-800-A01-D23	-	MOUNTING PLATE PL-14
2, 5	03008-800-A01-D24	-	MOUNTING PLATE PL-15
2, 5	03008-800-A01-D25	-	MOUNTING PLATE PL-16
2, 5	03008-800-A01-D26	-	MOUNTING PLATE PL-17

**NOTE:** Enclosed for your use in purchase of material and field installation are 3 sets of the listed Secondary Air Duct Turning vane drawings. These provide details for the vanes associated with Air Flow Sciences windbox model schematics L-04-ABI-06, Figures 7 & 8, Horizontal Vanes. Note that Vanes MK5 and MK6 will be revised for notching to clear steel however the associated drawings enclosed are sufficient for purchase of material.

We are working on finalizing vane details for the divider walls, small egg crates, and south/north levels 2 & 3 depicted on model schematics 6, 9-14. I will forward these to you upon completion later this week.

**CODE**

1	FOR REVIEW	4	FOR COMMENT
2	FOR ISSUE	5	FOR MANUFACTURE
3	FOR INFORMATION	6	OTHER

D:\IGS03\IGS03-04 Unit 2 Burners(03-96033-00)\ABT Burner Drawings\Turning Vanes\IPSC 2-23-04.doc

**IP7\_027641**

Phil,

See attached document transmittal and associated turning vane details drawings for your use Howard Hamilton should be able to print these out with e-drawing viewer I also put 3 copies in a DHL package

There is more to come as stated in the transmittal and I will get those to you as soon as I receive them

Sal

271 Route 202/206  
P O Box 410  
Pluckemin, New Jersey 07978  
Phone 908-470-0470, FAX 908-470-0479

**CONTRACT 04-45606      AS BUILTS – Windbox Turning Vanes      AUGUST 26, 2004**

**FROM:** Sal Ferrara

**NOTE:** Enclosed for your records are the listed drawings of the windbox turning vanes and baffles. These drawings were revised to depict the arrangement as installed during the March 2004 Outage.

1	FOR REVIEW	4	FOR COMMENT
2	FOR ISSUE	5	FOR MANUFACTURE
3	FOR INFORMATION	6	OTHER

**IP7 027643**

# ADVANCED BURNER TECHNOLOGIES

271 Route 202/206

P O Box 410

Pluckemin, New Jersey 07978

Phone 908-470-0470, FAX 908-470-0479

## DRAWING TRANSMITTAL

**TO:** ISSUE

**FROM:** CHUCK ONAITIS

**DATE:** 3/10/2004

CODE	DRAWING NUMBER	REV	DRAWING TITLE
3 5	03008-800-A06-0	-	WINDBOX BAFFLES ARRANGEMENT
3 5	03008-800-A06-D01	-	WINDBOX INLET BAFFLES "F"
3 5	03008-800-A06-D04	-	WINDBOX BAFFLES "D & E"
3 5	03008-800-A06-D05	-	WINDBOX BAFFLES "C"
3 5	03008-800-A06-D06	-	WINDBOX BAFFLES "A&B"
3 5	03008-800-A06-D07	-	TYP TOP AND BOTTOM SUPPORT BRACE

### CODE

- 1 FOR REVIEW
- 2 FOR ISSUE
- 3 FOR INFORMATION
- 4 FOR COMMENT
- 5 FOR MANUFACTURE
- 6 OTHER

----- Original Message -----

**From:** Chuck Onaitis

**To:** James Nelson

**Cc:** Joel Vatsky ; Sal Ferrara

**Sent:** Wednesday, March 10, 2004 4:08 PM

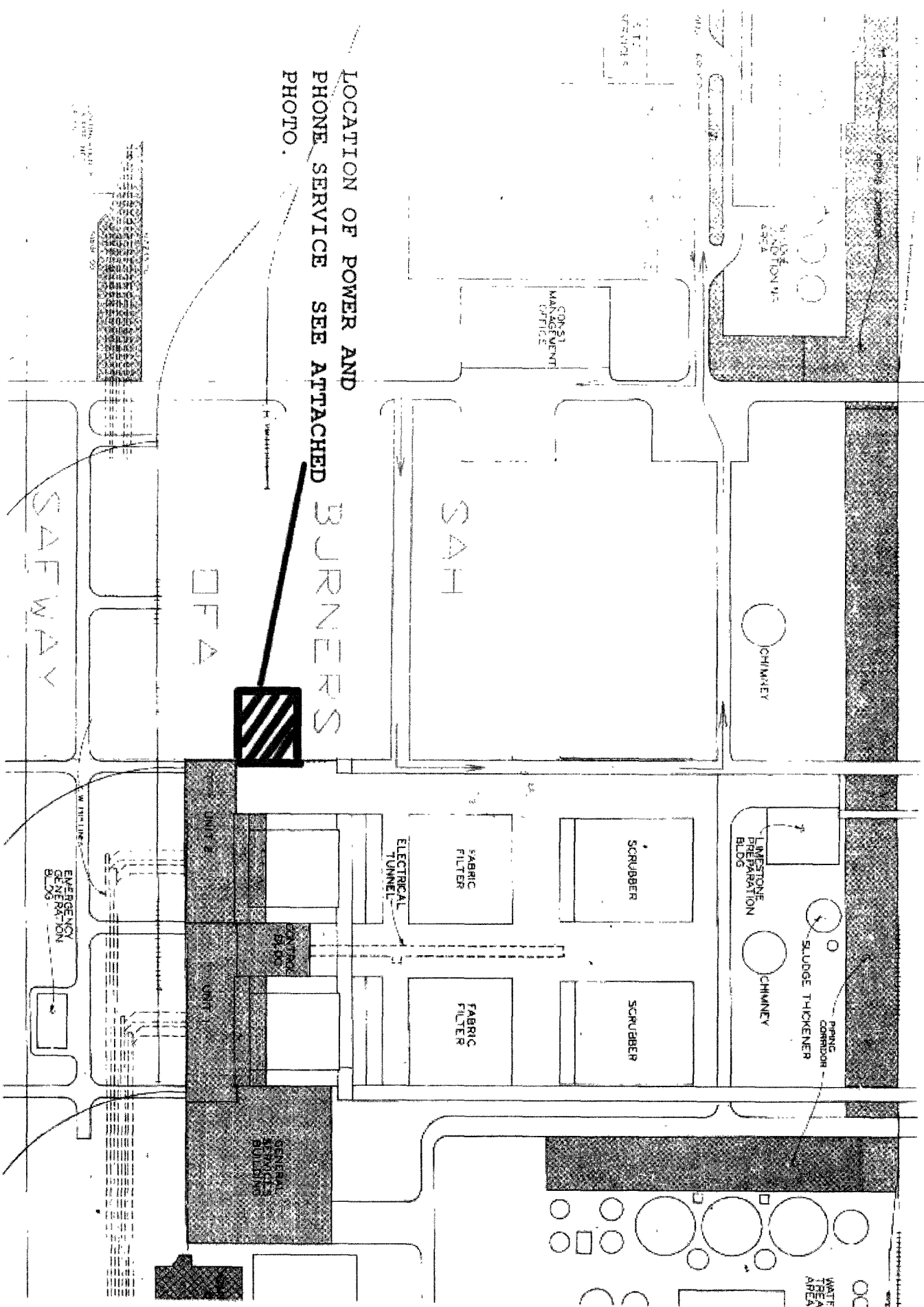
**Subject:** Windbox baffle drawings

Attached are the windbox baffle arrangement drawings. These drawings define the location and general construction of the baffles. Modifications, other than moving the baffles, may be made to suit the conditions in the windbox.

Any questions please call me at 908-470-0722 or after 5:00 Eastern I can be reached at 610-330-9916.

Chuck Onaitis

# PROCESSOR LAYDOWN PLAN



LOCATION OF POWER AND  
PHONE SERVICE SEE ATTACHED  
PHOTO. BURNERS

#### Coordination Issues

Burner assemblies and associated hardware will be staged in the outer areas of floors 5 through 8, at both the front and rear of the boiler, beginning approximately January 12<sup>th</sup>. Preparation of appropriate access up the back of the boiler will be coordinated with Maintenance to ensure an acceptable, permanent design of this accessway.

Existing burner parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Howard Hamilton and Jerry Finlinson.

#### **IV. Air Heater Modifications**

Bret Kent

Mnt. Supv (II)  
Harlan Fennemore

#### Coordination Issues

This modification consists of rebuilding the secondary air heater rotor and replacing the existing, tri-level design with an improved two level design. The air heater materials will be routed through the Fan Room bays and up through the air heater access ports. Materials will be removed by the same path. Existing air heater parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Bret Kent.

#### **V. Boiler External NDE & Drum Mods.**

Dean Wood

Longview  
SMS Contractor  
Dave Hahn

#### Coordination Issues

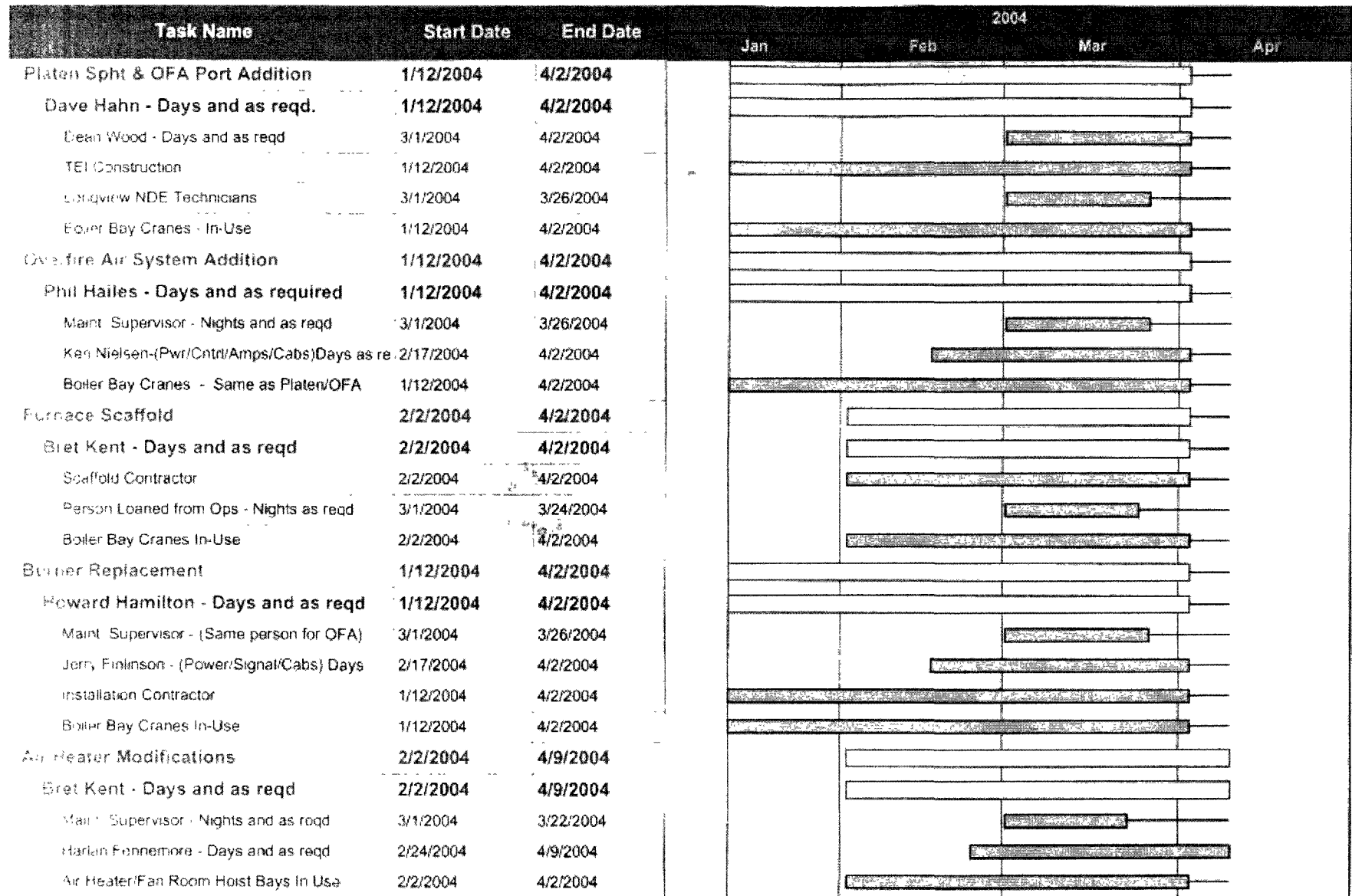
The boiler external NDE scope has already been issued to Mnt./Outage planning. The boiler drum modifications will be completed in the same manner as Unit 1. Scaffold for the boiler external NDE work will begin on approximately February 16<sup>th</sup>, as usual. The boiler NDE scope will be detailed in the outage inspection listings published in mid-January as normal.

#### Maintenance/Operations Support

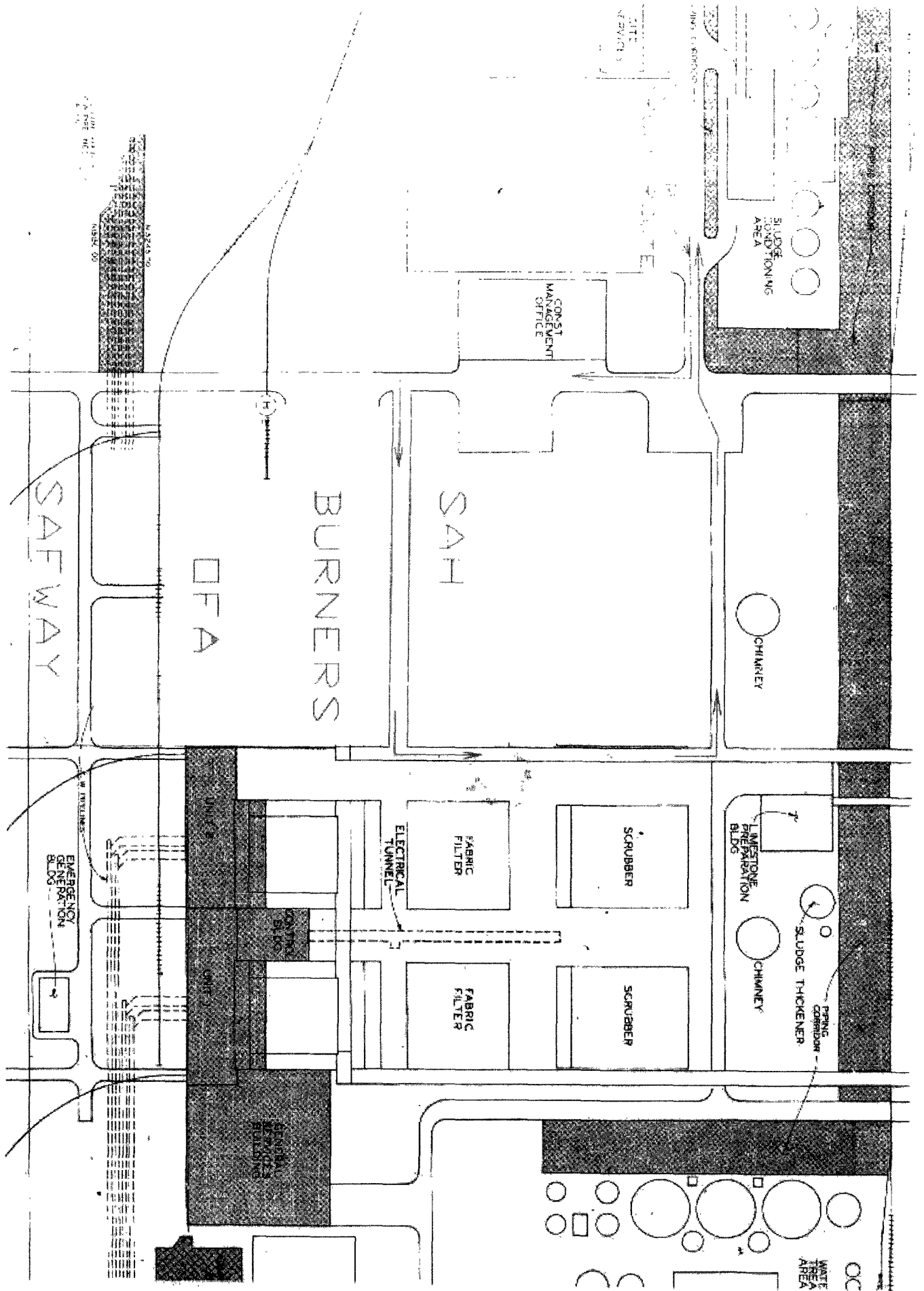
Safety tags and associated group sheets for this work will be held by Dean Wood.



E.S. Unit 2 Boiler/SAH Outage Plan



# SEED CONTRACTOR LAYDOWN PLAN



Unit 2 Outage 2004  
BOILER/AIR HEATER MODIFICATIONS  
Outage Coordination Plan

<u>Project</u>	<u>Coordinator</u>	<u>Project Support</u>
I. Platen Superheat Addition	Dave Hahn	Longview Dean Wood

Coordination Issues

The platen surface and OFA ports will be installed in essentially an identical manner to Unit 1. Longview NDE inspectors will be engaged during both shifts in the platens and the OFA areas. TEI will be the prime contractor and will locate directly west of Unit 2.

Materials will be staged on the 9<sup>th</sup> and 14<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn or Phil Hailes for this work.

II. Overfire Air System	Phil Hailes	Bernell Warner Mnt. Supv. (I) Ken Nielsen
-------------------------	-------------	---

Coordination Issues

The OFA system will be installed in essentially an identical manner as Unit 1 except that the structural modification work and certain aspects of the OFA ducting system will begin a full month earlier, in mid-January. The other major exception is a reorientation of the port duct and a redesign of the OFA damper linkage geometry.

Materials for this work will be staged on the 8<sup>th</sup> and 9<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn, Phil Hailes and Ken Nielsen for this work.

III. Burner Replacement	Howard Hamilton	Bernell Warner Mnt. Supv. (I) Jerry Finlinson
-------------------------	-----------------	---

#### Coordination Issues

Burner assemblies and associated hardware will be staged in the outer areas of floors 5 through 8, at both the front and rear of the boiler, beginning approximately January 12<sup>th</sup>. Preparation of appropriate access up the back of the boiler will be coordinated with Maintenance to ensure an acceptable, permanent design of this accessway.

Existing burner parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Howard Hamilton and Jerry Finlinson.

#### **IV. Air Heater Modifications**

Bret Kent

Mnt. Supv (II)  
Harlan Fennemore

#### Coordination Issues

This modification consists of rebuilding the secondary air heater rotor and replacing the existing, tri-level design with an improved two level design. The air heater materials will be routed through the Fan Room bays and up through the air heater access ports. Materials will be removed by the same path. Existing air heater parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Bret Kent.

#### **V. Boiler External NDE & Drum Mods.**

Dean Wood

Longview  
SMS Contractor  
Dave Hahn

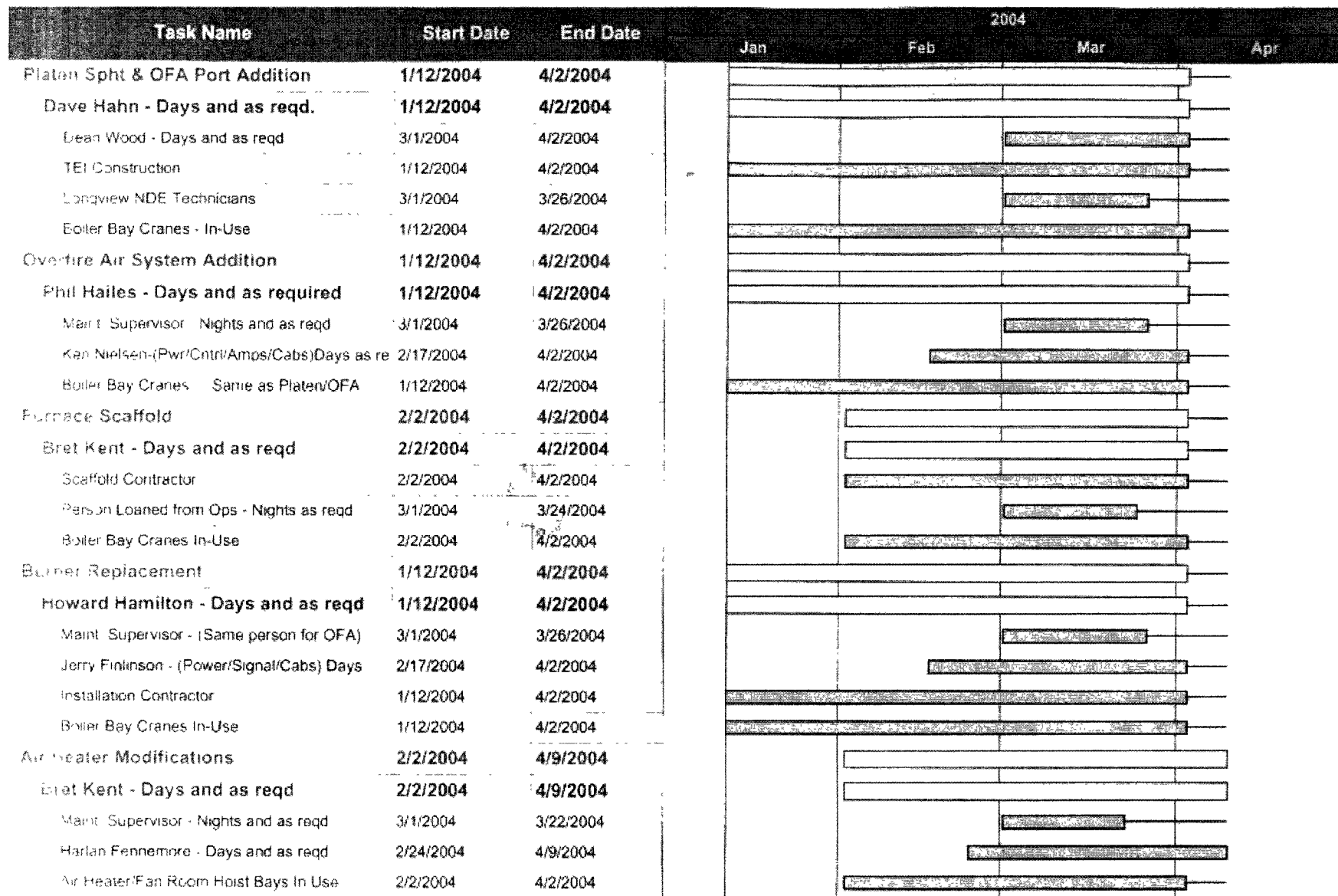
#### Coordination Issues

The boiler external NDE scope has already been issued to Mnt./Outage planning. The boiler drum modifications will be completed in the same manner as Unit 1. Scaffold for the boiler external NDE work will begin on approximately February 16<sup>th</sup>, as usual. The boiler NDE scope will be detailed in the outage inspection listings published in mid-January as normal.

#### Maintenance/Operations Support

Safety tags and associated group sheets for this work will be held by Dean Wood.

# E.S. Unit 2 Boiler/SAH Outage Plan



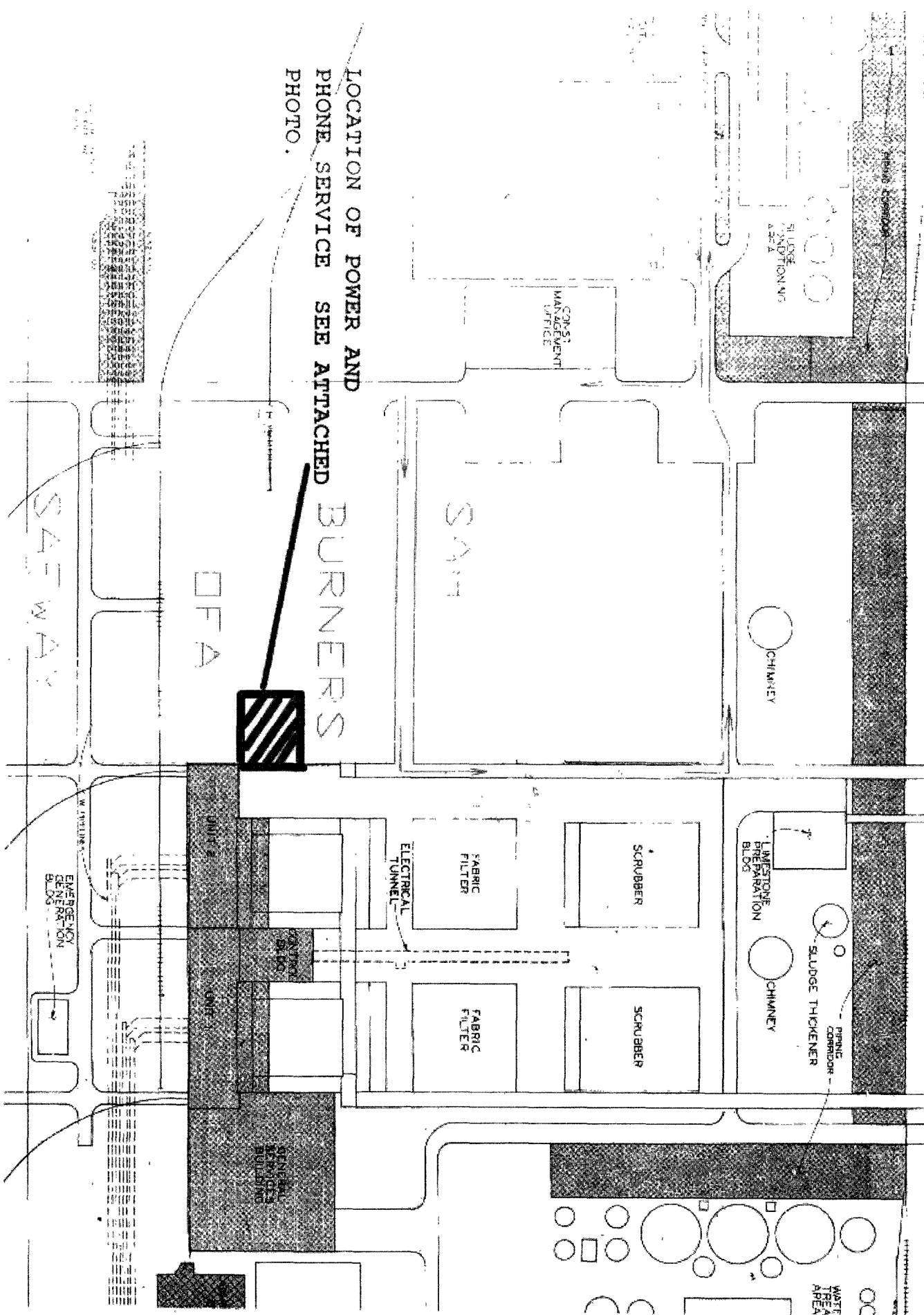


# SEED CONTRACTOR LAYDOWN PLAN

LOCATION OF POWER AND  
PHONE SERVICE SEE ATTACHED  
PHOTO.

BURNERS

DFA



Unit 2 Outage 2004  
BOILER/AIR HEATER MODIFICATIONS  
Outage Coordination Plan

<u>Project</u>	<u>Coordinator</u>	<u>Project Support</u>
I. Platen Superheat Addition	Dave Hahn	Longview Dean Wood

Coordination Issues

The platen surface and OFA ports will be installed in essentially an identical manner to Unit 1. Longview NDE inspectors will be engaged during both shifts in the platens and the OFA areas. TEI will be the prime contractor and will locate directly west of Unit 2.

Materials will be staged on the 9<sup>th</sup> and 14<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn or Phil Hailes for this work.

II. Overfire Air System	Phil Hailes	Bernell Warner Mnt. Supv. (I) Ken Nielsen
-------------------------	-------------	---

Coordination Issues

The OFA system will be installed in essentially an identical manner as Unit 1 except that the structural modification work and certain aspects of the OFA ducting system will begin a full month earlier, in mid-January. The other major exception is a reorientation of the port duct and a redesign of the OFA damper linkage geometry.

Materials for this work will be staged on the 8<sup>th</sup> and 9<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

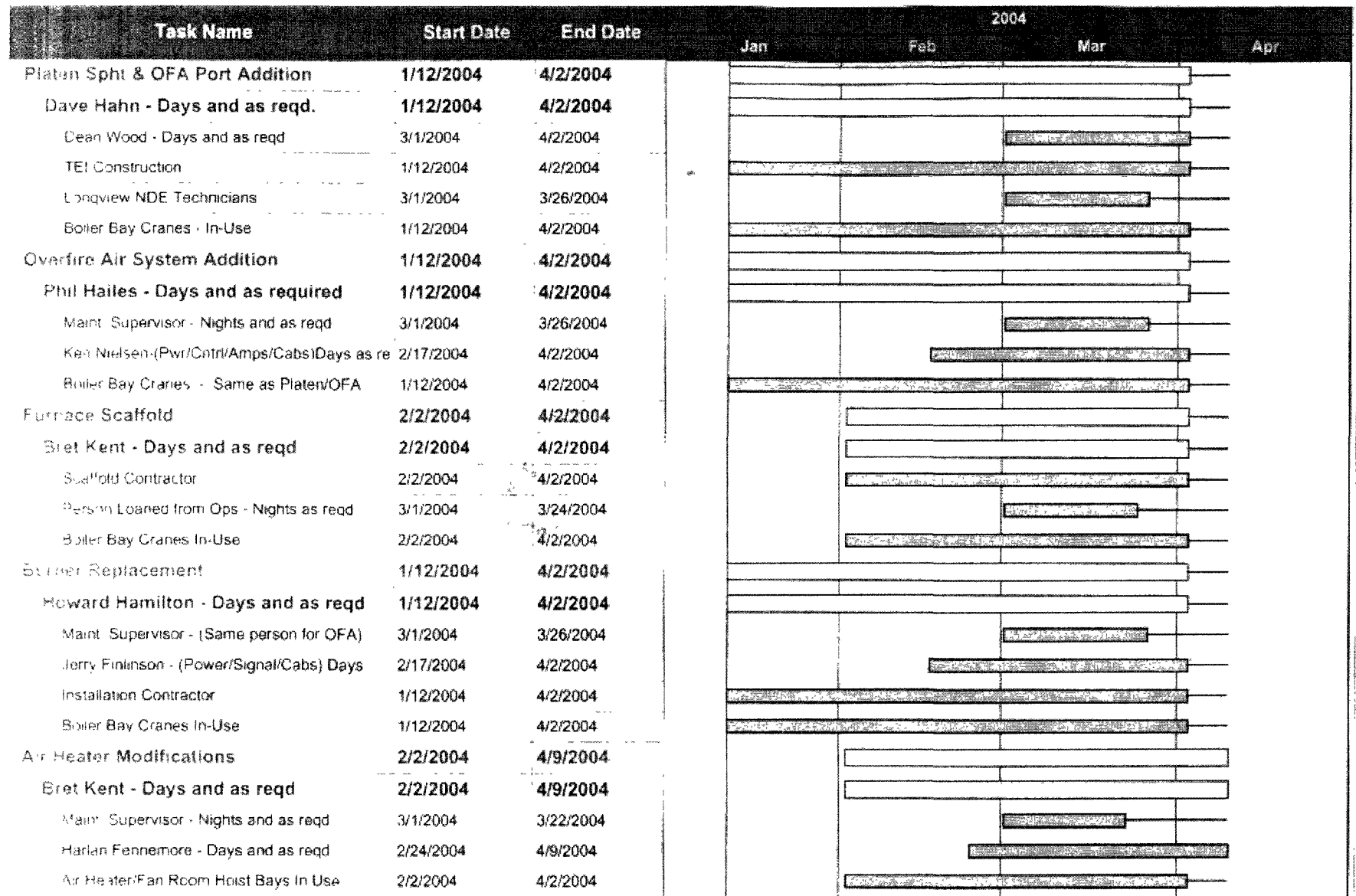
We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn , Phil Hailes and Ken Nielsen for this work.

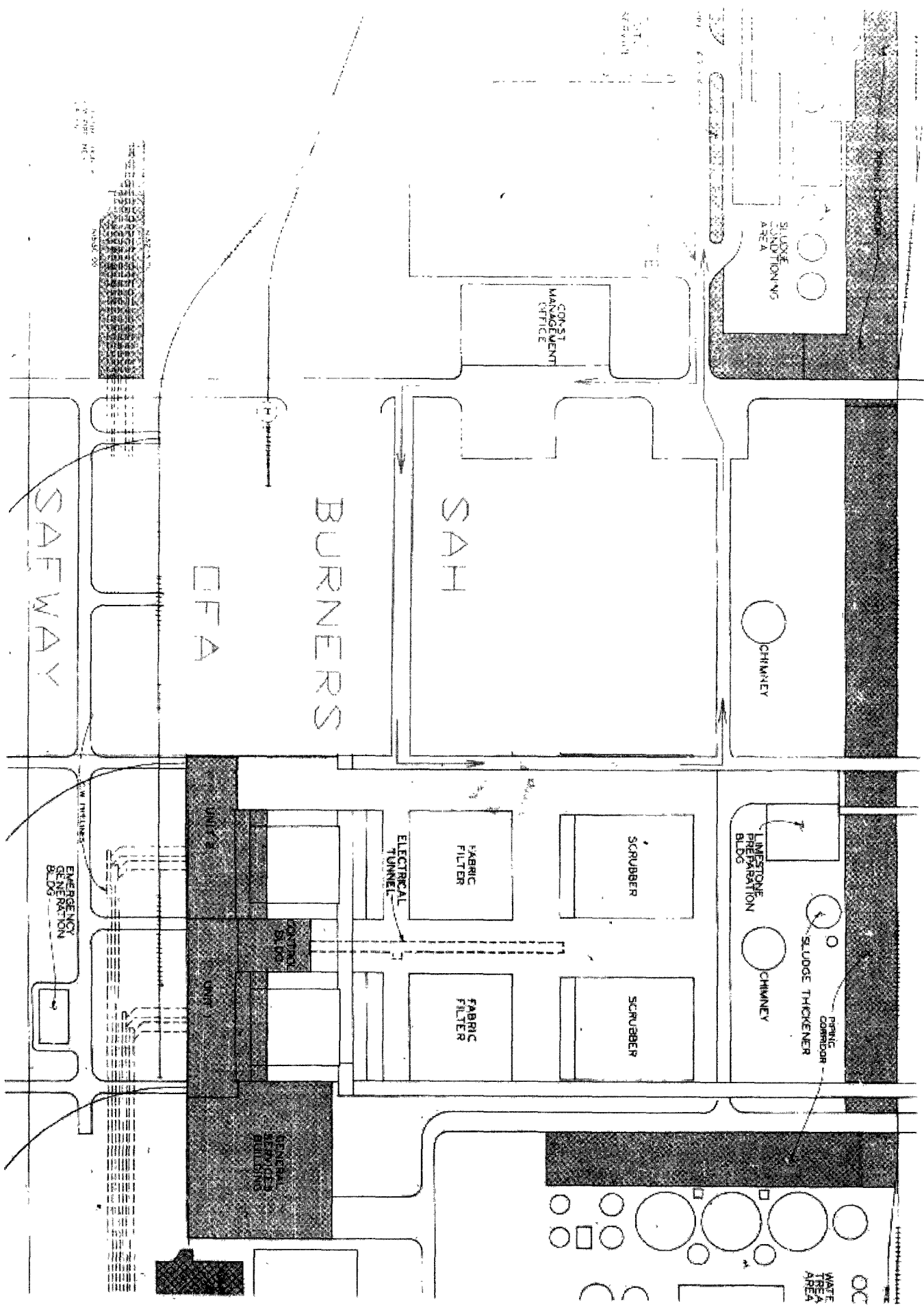
III. Burner Replacement	Howard Hamilton	Bernell Warner Mnt. Supv. (I) Jerry Finlinson
-------------------------	-----------------	---



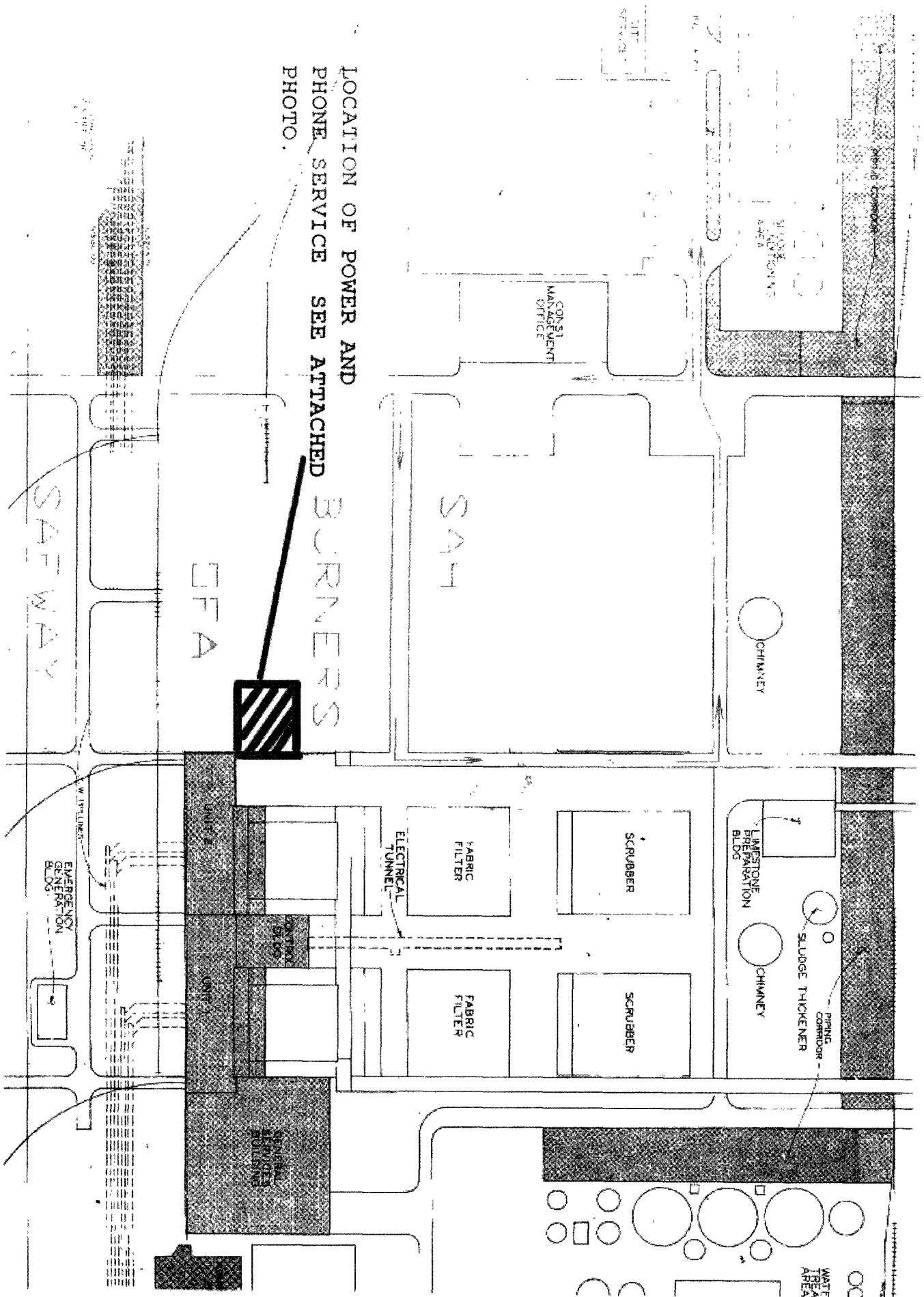
E.S. Unit 2 Boiler/SAH Outage Plan



# PROPOSED CONTRACTOR LAYDOWN PLAN



# SEED CONTRACTOR LAYDOWN PLAN



Unit 2 Outage 2004  
BOILER/AIR HEATER MODIFICATIONS  
Outage Coordination Plan

<u>Project</u>	<u>Coordinator</u>	<u>Project Support</u>
I. Platen Superheat Addition	Dave Hahn	Longview Dean Wood

Coordination Issues

The platen surface and OFA ports will be installed in essentially an identical manner to Unit 1. Longview NDE inspectors will be engaged during both shifts in the platens and the OFA areas. TEI will be the prime contractor and will locate directly west of Unit 2.

Materials will be staged on the 9<sup>th</sup> and 14<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn or Phil Hailes for this work.

II. Overfire Air System	Phil Hailes	Bernell Warner Mnt. Supv. (I) Ken Nielsen
-------------------------	-------------	---

Coordination Issues

The OFA system will be installed in essentially an identical manner as Unit 1 except that the structural modification work and certain aspects of the OFA ducting system will begin a full month earlier, in mid-January. The other major exception is a reorientation of the port duct and a redesign of the OFA damper linkage geometry.

Materials for this work will be staged on the 8<sup>th</sup> and 9<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn , Phil Hailes and Ken Nielsen for this work.

III. Burner Replacement	Howard Hamilton	Bernell Warner Mnt. Supv. (I) Jerry Finlinson
-------------------------	-----------------	---

#### Coordination Issues

Burner assemblies and associated hardware will be staged in the outer areas of floors 5 through 8, at both the front and rear of the boiler, beginning approximately January 1<sup>st</sup>. Preparation of appropriate access up the back of the boiler will be coordinated with Maintenance to ensure an acceptable, permanent design of this accessway.

Existing burner parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Howard Hamilton and Jerry Finlinson.

#### **IV. Air Heater Modifications**

Bret Kent

Mnt. Supv (II)  
Harlan Fennemore

#### Coordination Issues

This modification consists of rebuilding the secondary air heater rotor and replacing the existing, tri-level design with an improved two level design. The air heater materials will be routed through the Fan Room bays and up through the air heater access ports. Materials will be removed by the same path. Existing air heater parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Bret Kent.

#### **V. Boiler External NDE & Drum Mods.**

Dean Wood

Longview  
SMS Contractor  
Dave Hahn

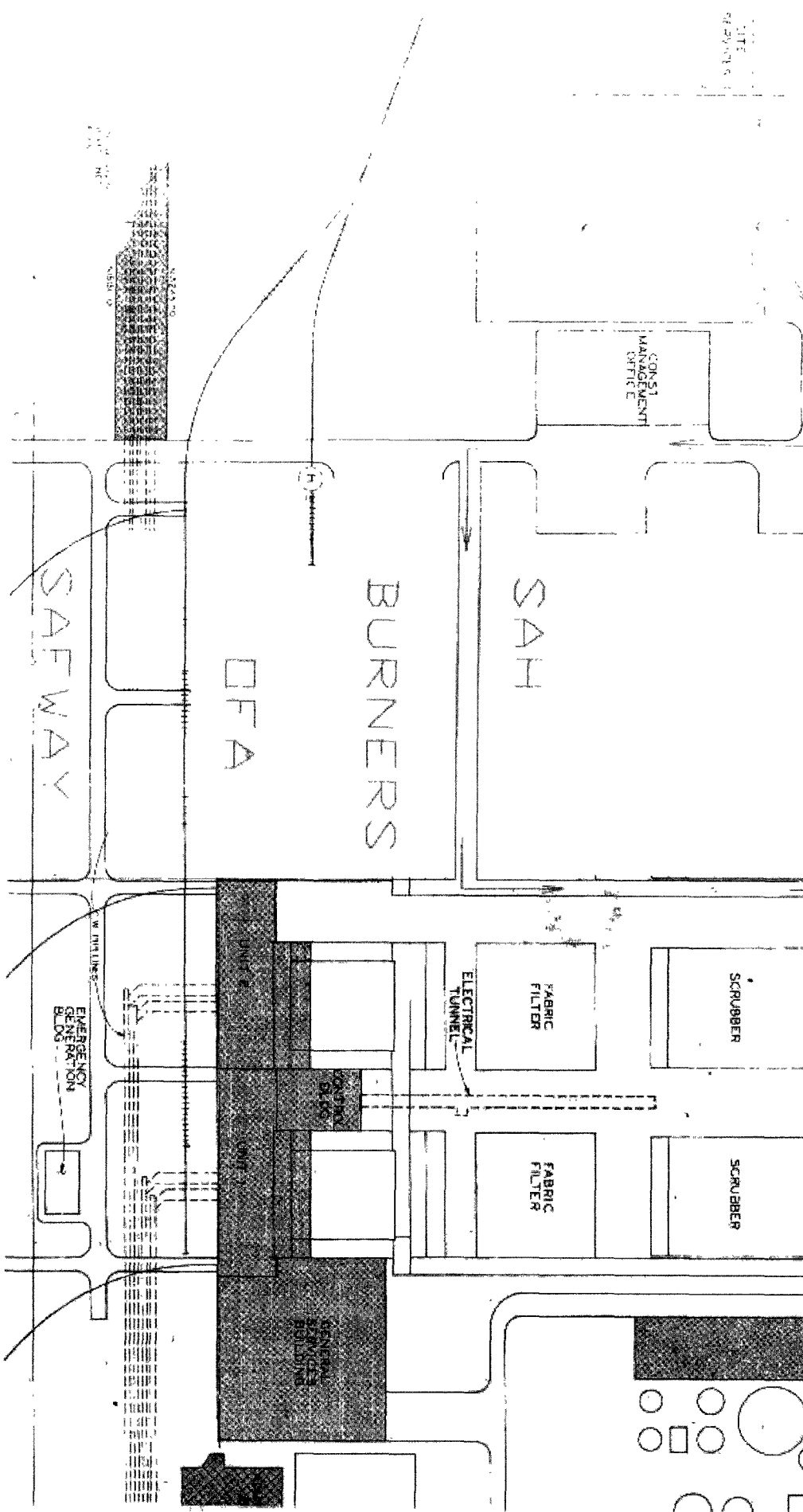
#### Coordination Issues

The boiler external NDE scope has already been issued to Mnt./Outage planning. The boiler drum modifications will be completed in the same manner as Unit 1. Scaffold for the boiler external NDE work will begin on approximately February 16<sup>th</sup>, as usual. The boiler NDE scope will be detailed in the outage inspection listings published in mid-January as normal.

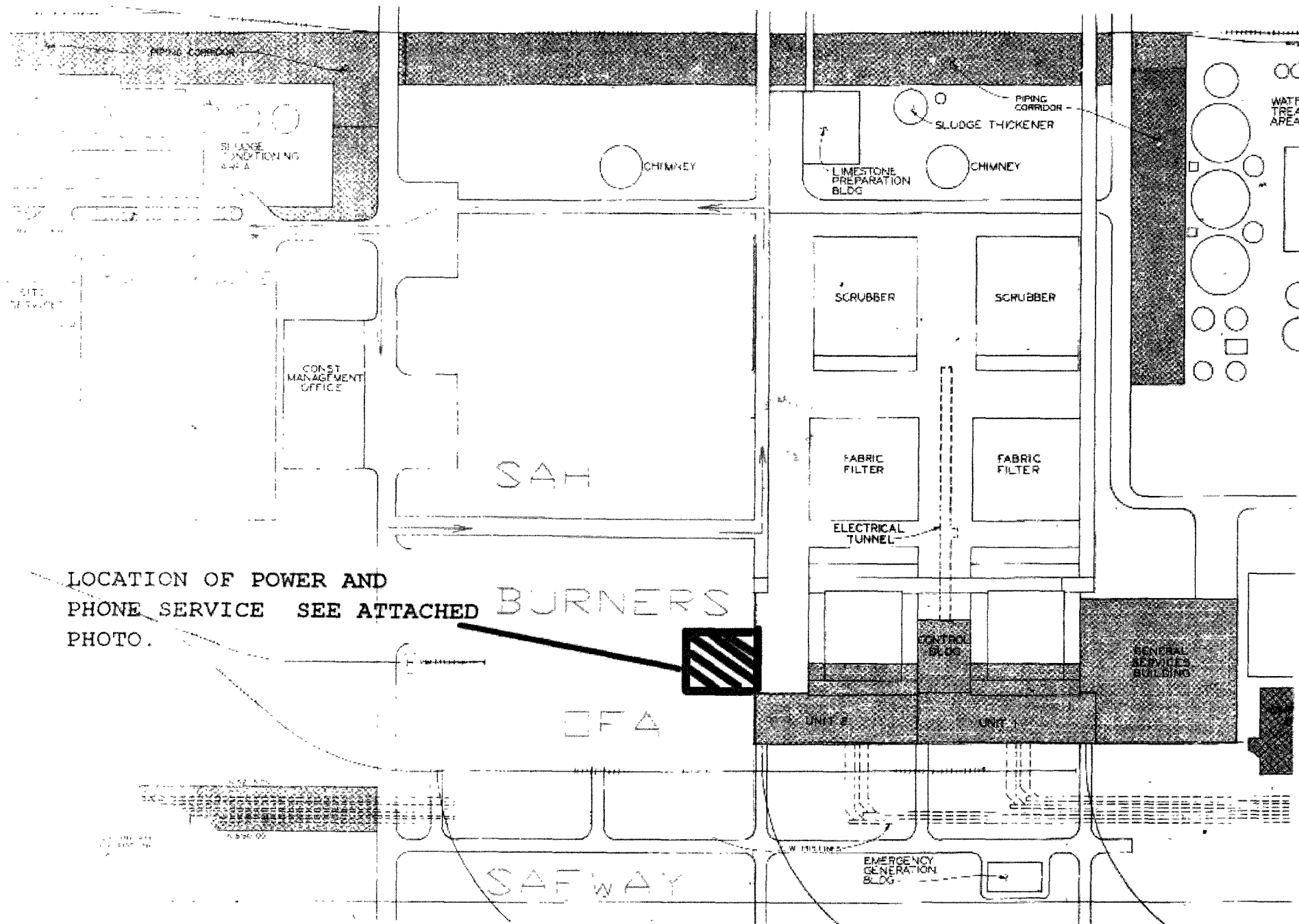
#### Maintenance/Operations Support

Safety tags and associated group sheets for this work will be held by Dean Wood.

MAST  
TIRE



# PROPOSED CONTRACTOR LAYDOWN PLAN



IP7\_027662

Unit 2 Outage 2004  
BOILER/AIR HEATER MODIFICATIONS  
Outage Coordination Plan

<u>Project</u>	<u>Coordinator</u>	<u>Project Support</u>
I. Platen Superheat Addition	Dave Hahn	Longview Dean Wood

Coordination Issues

The platen surface and OFA ports will be installed in essentially an identical manner to Unit 1. Longview NDE inspectors will be engaged during both shifts in the platens and the OFA areas. TEI will be the prime contractor and will locate directly west of Unit 2.

Materials will be staged on the 9<sup>th</sup> and 14<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn or Phil Hailes for this work.

II. Overfire Air System	Phil Hailes	Bernell Warner Mnt. Supv. (I) Ken Nielsen
-------------------------	-------------	---

Coordination Issues

The OFA system will be installed in essentially an identical manner as Unit 1 except that the structural modification work and certain aspects of the OFA ducting system will begin a full month earlier, in mid-January. The other major exception is a reorientation of the port duct and a redesign of the OFA damper linkage geometry.

Materials for this work will be staged on the 8<sup>th</sup> and 9<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn, Phil Hailes and Ken Nielsen for this work.

III. Burner Replacement	Howard Hamilton	Bernell Warner Mnt. Supv. (I) Jerry Finlinson
-------------------------	-----------------	---



#### Coordination Issues

Burner assemblies and associated hardware will be staged in the outer areas of Boers 5 through 8, at both the front and rear of the boiler, beginning approximately January 1<sup>st</sup>. Preparation of appropriate access up the back of the boiler will be coordinated with Maintenance to ensure an acceptable, permanent design of this accessway.

Existing burner parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Howard Hamilton and Jerry Finlinson.

#### IV. Air Heater Modifications

Bret Kent

Mnt. Supv (II)  
Harlan Fennemore

#### Coordination Issues

This modification consists of rebuilding the secondary air heater rotor and replacing the existing, tri-level design with an improved two level design. The air heater materials will be routed through the Fan Room bays and up through the air heater access ports. Materials will be removed by the same path. Existing air heater parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Bret Kent.

#### V. Boiler External NDE & Drum Mods.

Dean Wood

Longview  
SMS Contractor  
Dave Hahn

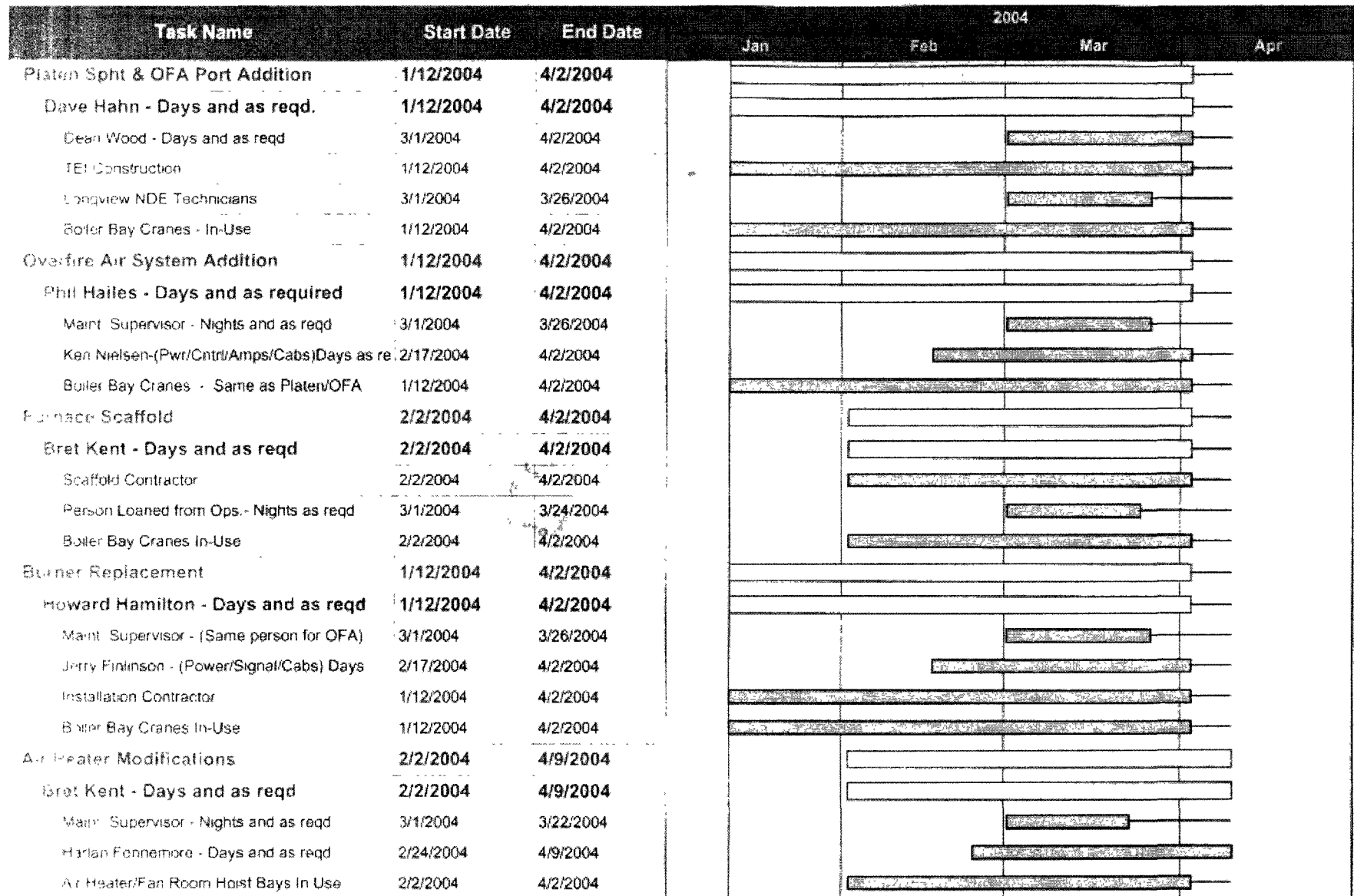
#### Coordination Issues

The boiler external NDE scope has already been issued to Mnt./Outage planning. The boiler drum modifications will be completed in the same manner as Unit 1. Scaffold for the boiler external NDE work will begin on approximately February 16<sup>th</sup>, as usual. The boiler NDE scope will be detailed in the outage inspection listings published in mid-January as normal.

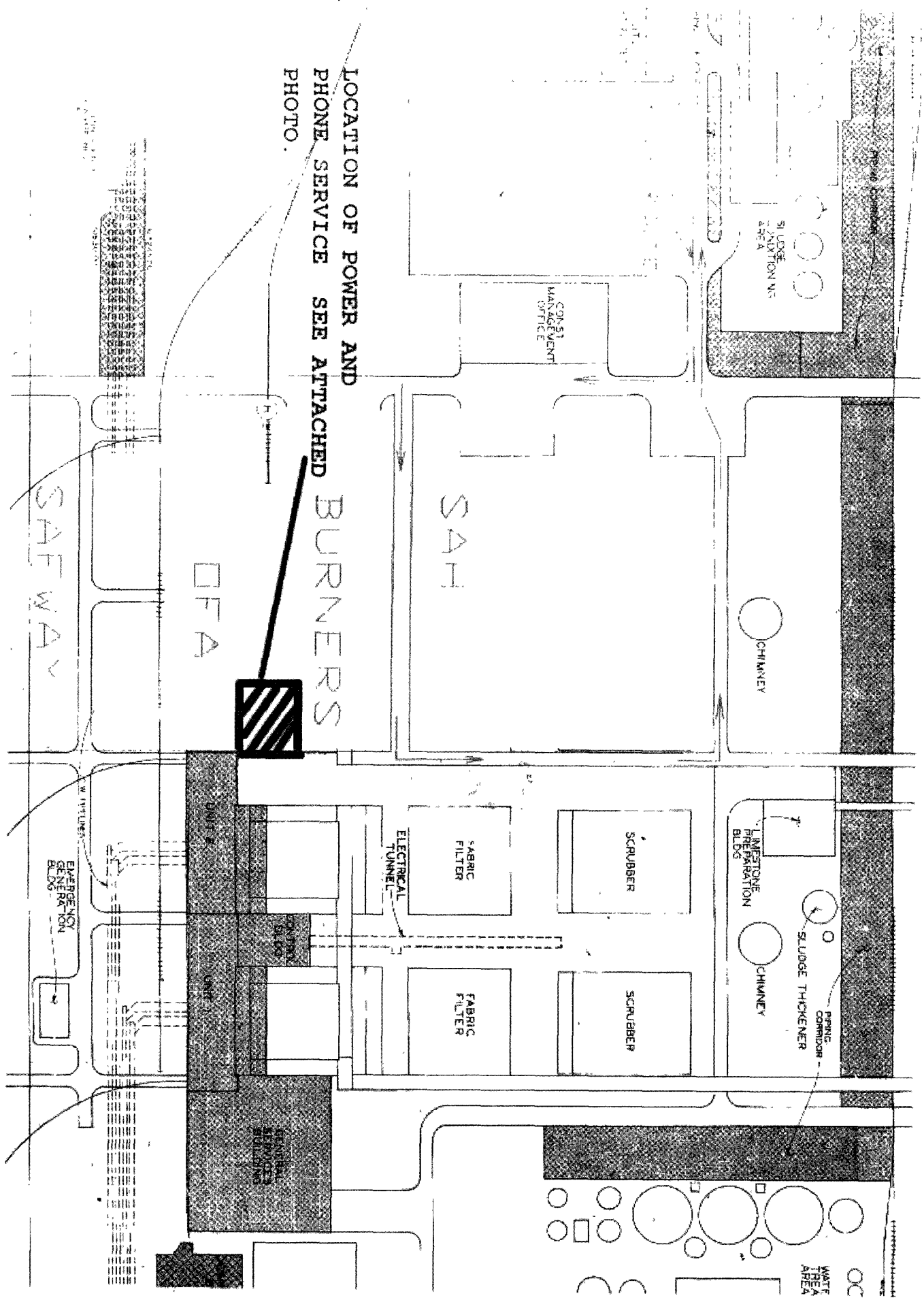
#### Maintenance/Operations Support

Safety tags and associated group sheets for this work will be held by Dean Wood.

# E.S. Unit 2 Boiler/SAH Outage Plan



# PROPOSED CONTRACTOR LAYDOWN PLAN



Unit 2 Outage 2004  
BOILER/AIR HEATER MODIFICATIONS  
Outage Coordination Plan

<u>Project</u>	<u>Coordinator</u>	<u>Project Support</u>
I. Platen Superheat Addition	Dave Hahn	Longview Dean Wood

Coordination Issues

The platen surface and OFA ports will be installed in essentially an identical manner to Unit 1. Longview NDE inspectors will be engaged during both shifts in the platens and the OFA areas. TEI will be the prime contractor and will locate directly west of Unit 2.

Materials will be staged on the 9<sup>th</sup> and 14<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn or Phil Hailes for this work.

II. Overfire Air System	Phil Hailes	Bernell Warner Mnt. Supv. (I) Ken Nielsen
-------------------------	-------------	---

Coordination Issues

The OFA system will be installed in essentially an identical manner as Unit 1 except that the structural modification work and certain aspects of the OFA ducting system will begin a full month earlier, in mid-January. The other major exception is a reorientation of the port duct and a redesign of the OFA damper linkage geometry.

Materials for this work will be staged on the 8<sup>th</sup> and 9<sup>th</sup> floors beginning approximately 1/12/04.

Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets will be held by either Dave Hahn , Phil Hailes and Ken Nielsen for this work.

III. Burner Replacement	Howard Hamilton	Bernell Warner Mnt. Supv. (I) Jerry Finlinson
-------------------------	-----------------	---

#### Coordination Issues

Burner assemblies and associated hardware will be staged in the outer areas of floors 5 through 8, at both the front and rear of the boiler, beginning approximately January 12<sup>th</sup>. Preparation of appropriate access up the back of the boiler will be coordinated with Maintenance to ensure an acceptable, permanent design of this accessway.

Existing burner parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Howard Hamilton and Jerry Finlinson.

#### **IV. Air Heater Modifications**

Bret Kent

Mnt. Supv (II)  
Harlan Fennemore

#### Coordination Issues

This modification consists of rebuilding the secondary air heater rotor and replacing the existing, tri-level design with an improved two level design. The air heater materials will be routed through the Fan Room bays and up through the air heater access ports. Materials will be removed by the same path. Existing air heater parts, that Mnt. has no need of, will be stockpiled for pickup by Western Metals Inc.

#### Maintenance/Operations Support

We would like to discuss the possibility of Mntnce support for contract direction on the night shift further, if the offer is still on the table. If boiler washdown is required, we request that this occur in early January to avoid interference with several projects.

Safety tags and associated group sheets for this work will be held by Bret Kent.

#### **V. Boiler External NDE & Drum Mods.**

Dean Wood

Longview  
SMS Contractor  
Dave Hahn

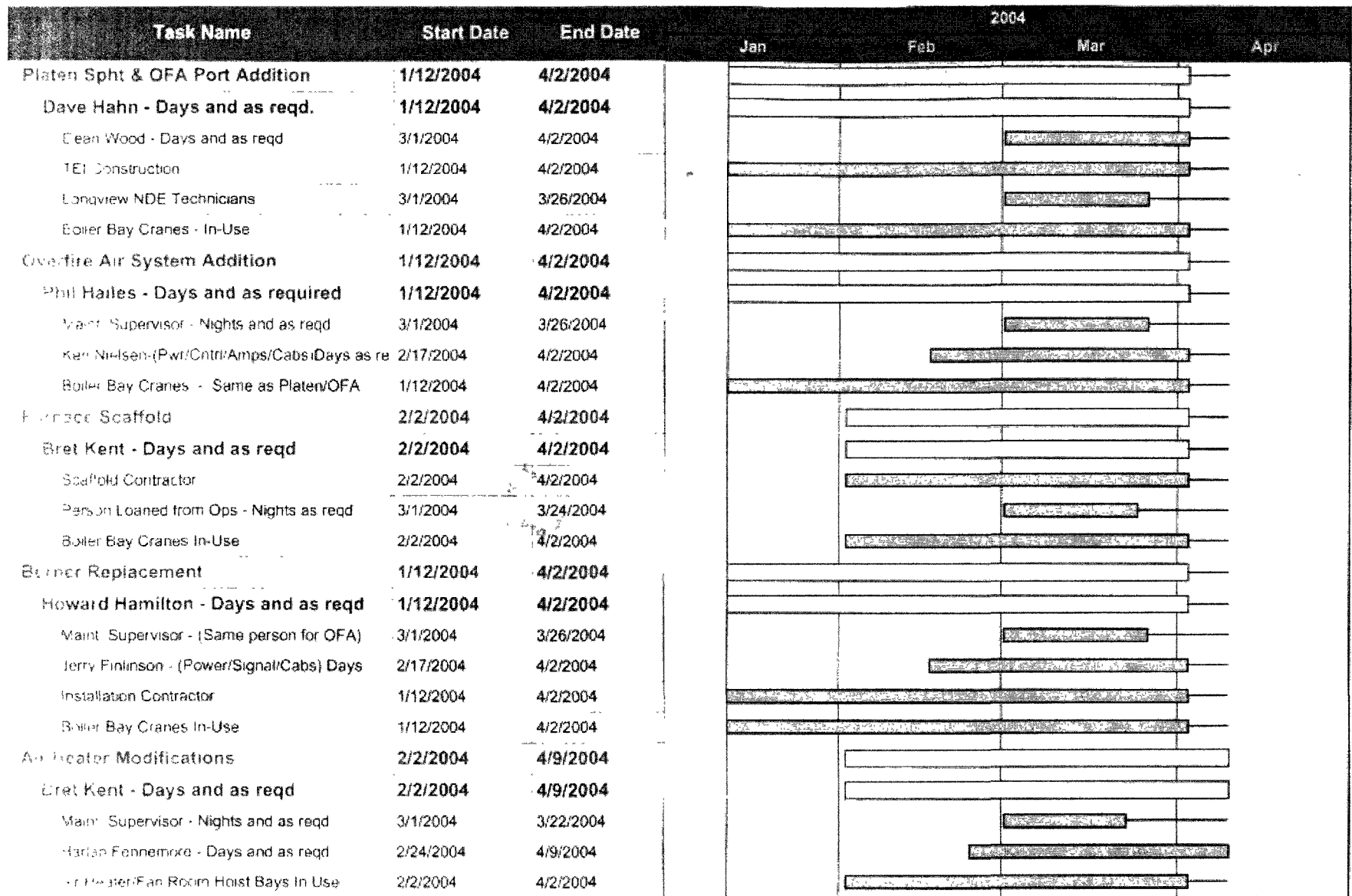
#### Coordination Issues

The boiler external NDE scope has already been issued to Mnt./Outage planning. The boiler drum modifications will be completed in the same manner as Unit 1. Scaffold for the boiler external NDE work will begin on approximately February 16<sup>th</sup>, as usual. The boiler NDE scope will be detailed in the outage inspection listings published in mid-January as normal.

#### Maintenance/Operations Support

Safety tags and associated group sheets for this work will be held by Dean Wood.

E.S. Unit 2 Boiler/SAH Outage Plan





Alan.

We do not have any of the burner wts for your unit listed on our drawings. I did bounce this off of our burner group and they estimated that your burners should be approx. 9000 lbs each. You may want to add a little to be conservative for your rigging estimates.

Also, the coal elbow flanges are sealed to the burner nozzle with copaltite cement.

Hope this helps.

Dan





**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/16/04

**Line** Atomizing Air - Purge Air Lines

**Location** 7th floor front wall A-row

**Test Pressure** 120 psi

**Accepted by:**

**IPP Representative:** Larry Isley

**TEI Representative:** THOMAS FARRAR *CFJ*



Engineering & Construction Services

**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/11/04

**Line** 5th Atom Air + Purge Air

**Location** 5th floor front wall B-row

**Test Pressure** 120 psi

**Accepted by:**

**IPP Representative:** Larry Isley

**TEI Representative:** THOMAS FARRAR *CF*



TEI POWER ENGINEERING, INC.

10000 W. 10TH AVE. SUITE 100

DENVER, CO 80202

**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/16/04

**Line** Atomizing Air - Purge Air Lines

**Location** 8th floor front wall E-row

**Test Pressure** 120 psi

**Accepted by:**

**IPP Representative:** Larry Isley

**TEI Representative:** THOMAS FARRAR *CFE*



**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/15/04

**Line** Atomizing Air + Purge Air

**Location** 6th floor front wall F-Row

**Test Pressure** 120 PSI

**Accepted by:**

**IPP Representative:** Larry Isley

**TEI Representative:** THOMAS FARRAR CF

**Pressure Test Results**  
**Intermountain Power Plant**


**Date** 3/15/04

**Line** atomized AIR & TURBO AIR

**Location** 6th Floor Boat Walk (C-ROW)

**Test Pressure** 120 PSIG

**Accepted by:**

**IPP Representative:**  3/16/04  
Howard Hamilton

**TEI Representative:** CB Janner

Blow out lines for 90 seconds each line

**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/18/04

**Line** Atomized Air & Fudge Air

**Location** 8th Floor Rear Wall (D-Row)

**Test Pressure** 120 LPS

**Accepted by:**

**IPP Representative:** [Signature]

**TEI Representative:** CB [Signature]

*BLOW OUT ALL LINES  $\frac{3}{4}$ " & 1" FOR 90 SECONDS*



TECHNICAL SERVICES, INC.

**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/15/04

**Line** ATOMIZED Air & PURGE Air

**Location** 5TH Floor Room WALL - G ROW

**Test Pressure** 120 IPS

**Accepted by:**

**IPP Representative:**

Howard Hamilton

[Signature] 3/15/04

**TEI Representative:**

[Signature]

BLEW OUT LINES for 90 seconds EACH  
JR

**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/16/04

**Line** ARMORIZED AIR PURGE AIR

**Location** 7+1 REAR WALL (H ROW)

**Test Pressure** 120 PSI

**Accepted by:**

**IPP Representative:** 

**TEI Representative:** 

*BLOW OUT LINES FOR 90 SECONDS EACH LINE*





**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/16/04

**Line** Fuel Oil Lines

**Location** 7th floor front wall A-row

**Test Pressure** 120 psi

**Accepted by:**

**IPP Representative:** Larry Isley

**TEI Representative:** THOMAS FARRAR *CF*



AN IRVING-CLOUD COMPANY

**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/16/04

**Line** 5<sup>th</sup> fuel

**Location** 5<sup>th</sup> floor front wall B-row

**Test Pressure** 120 psi

**Accepted by:**

**IPP Representative:** Larry Isley

**TEI Representative:** THOMAS FARRAR *CBZ*



**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3 / 16 / 04

**Line** Fuel oil Lines

**Location** 8th floor front wall E-row

**Test Pressure** 120 psi

**Accepted by:**

**IPP Representative:** Larry Isley

**TEI Representative:** THOMAS FARRAR *CBF*



**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/16/04

**Line** Fuel Oil Line

**Location** 6th floor front wall F-Row

**Test Pressure** 120 psi

**Accepted by:**

**IPP Representative:** Larry Isley

**TEI Representative:** THOMAS FARRAR *TF*

**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/15/08

**Line**  $\frac{3}{4}$ " + 1" FUEL GAS

**Location** 6th FLOOR REAR WALL (ROWC)

**Test Pressure** 120 PSI

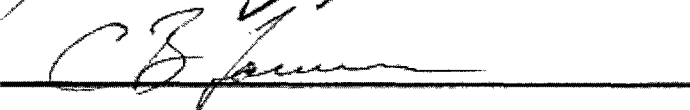
**Accepted by:**

**IPP Representative:**

*HORACE HAMMON*

 3/16/08

**TEI Representative:**



*SHUT OUT ALL LINES FOR 90 SECONDS + EACH LINE*



**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 5/18/04

**Line**  $\frac{3}{4}$  + 1" Fuel GAS

**Location** 8th Floor Rear Wall

**Test Pressure** 170 PSF

**Accepted by:**

**IPP Representative:** [Signature] 5/18/04

**TEI Representative:** [Signature]

*Blow out  $\frac{3}{4}$  + 1" for 90 seconds each line*



Date 3/15/04

**Location** 5<sup>TH</sup> FROM REAR WALL (G-ROW)

Test Pressure 120 IPS

**Accepted by:**

Howard Hamilton

**TEI Representative:**

Blow out all Lines for 90 seconds each  
This was after blowing  $\frac{1}{4}$  of 1" fuel line for 30 min.  $\frac{1}{4}$



**Pressure Test Results**  
**Intermountain Power Plant**

**Date** 3/15/04

**Line**  $\frac{3}{4}$  #101 FUEL GAS

**Location** 7th Floor REAR WALL

**Test Pressure** 120 FPS

**Accepted by:**

**IPP Representative:** 

**TEI Representative:** 

*BLOW OUT AN LINES FOR 90 SECONDS EACH LINE*



**Inspection Check List - Complete Burner Module**

TRUCK 2

Customer/Plant: Intermountain Power Service Contract Number: IPSC 04-45606, ABT A03008 Burner No: CW-8  
 (Burner Number is painted inside the top ratchet support channel)

<b>Operational Testing</b>		Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position		✓		
Sleeve damper full stroke operation	✓		JR	
Outer Spin Vanes full stroke operation	✓		JR	
Inner air zone damper full stroke operation	✓		JR	

<b>Dimensional Checks</b>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116.116	JR
OD of burner throat- check at 4 locations (record max.)	57"	56.34	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8	JR
Distance from face of burner throat to face of flow divider	12 3/8"	11 3/4	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 3/8	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 3/4 4 1/2	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 1/16 8 1/2	JR

<b>Miscellaneous Verifications</b>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027688

**Inspection Check List - Complete Burner Module**

TRUCK 2

1/27/04

Customer/Plant:	Contract Number:	Burner No:
Intermountain Power Service	IPSC: 04-45606, ABT-A03008	CW-9

(Burner Number is painted inside the top ratchet support channel)

Operational Testing			
Note:- use operator if shop installed - insure correct indicator/pin position			
	Accept	Init	Comment
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 1/2	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/4	JR
Distance from face of burner throat to face of flow divider	12 3/8"	11 3/4	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 15/16 4 3/8	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 7/16 8 1/2	JR

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

**Inspection Check List - Complete Burner Module**

TRUCK 3

<b>Customer/Plant:</b>	<b>Contract Number:</b>	<b>Burner No:</b>
Intermountain Power Service	IPSC-04-45606, ABT.A03008	CW- 10

(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>			
Note:- use operator if shop installed - insure correct indicator/pin position		Accept	Init
		✓	
Sleeve damper full stroke operation	✓		JR
Outer Spin Vanes full stroke operation	✓		JR
Inner air zone damper full stroke operation	✓		JR

<u>Dimensional Checks</u>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 <sup>2</sup> / <sub>16</sub>	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 <sup>3</sup> / <sub>4</sub>	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 <sup>3</sup> / <sub>16</sub>	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 <sup>4</sup> / <sub>16</sub>	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 <sup>1</sup> / <sub>4</sub>	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 <sup>15</sup> / <sub>16</sub> 4 <sup>3</sup> / <sub>16</sub>	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 <sup>1</sup> / <sub>16</sub> 8 <sup>1</sup> / <sub>2</sub>	JR

<u>Miscellaneous Verifications</u>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027690

**Inspection Check List - Complete Burner Module** *TRUCK 3*

**Customer/Plant:** Intermountain Power Service **Contract Number:** IPSC 04-45606, ABT A0300H **Burner No:** CW-11  
 (Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>	Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

<u>Dimensional Checks</u>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4"	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 7/8"	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8"	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/16"	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 5/16"	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	4" 4 1/8"	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 1/2" 8 1/2"	JR

<u>Miscellaneous Verifications</u>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

**Inspection Check List - Complete Burner Module** *TRUCK 3*

<b>Customer/Plant:</b>	<b>Contract Number:</b>	<b>Burner No:</b>
Intermountain Power Service	IPSC 04-45606, ABT A03008	CW-12

(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>	Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

<u>Dimensional Checks</u>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116.74	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 7/8	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 3/8	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06"	3 7/8	JR
	Max 4.32"	4 1/4	
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37"	8 3/8	JR
	Max 8.62"	8 1/2	

<u>Miscellaneous Verifications</u>	✓
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

### Inspection Check List - Complete Burner Module

Customer/Plant:

Contract Number:

Burner No:

Intermountain Power Service

IPSC: 04-45606, ABT:A03008

CW-13

(Burner Number is painted inside the top ratchet support channel)

Operational Testing	Accept	Init	Comment
Note: - use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4"	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 3/4"	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8"	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 5/16"	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4"	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	4" 4 1/4"	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8" 8 1/2"	JR

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027693

### Inspection Check List - Complete Burner Module

Customer/Plant:	Contract Number:	Burner No:
Intermountain Power Service	IPSC: 04-45606, ABT A03008	CW-14

(Burner Number is painted inside the top ratchet support channel)

Operational Testing	Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JK	
Outer Spin Vanes full stroke operation	✓	JK	
Inner air zone damper full stroke operation	✓	JK	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4"	JK
OD of burner throat- check at 4 locations (record max.)	57"	56 3/4"	JK
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	JK
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8"	JK
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/8"	JK
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4"	JK
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	4" 4 1/4"	JK
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 1/2" 8 7/16"	JK

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

### Inspection Check List - Complete Burner Module

Customer/Plant:	Contract Number:	Burner No:
Intermountain Power Service	IPSC: 04-45606, ABT A03008	CW-15

(Burner Number is painted inside the top ratchet support channel)

Operational Testing	Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 <sup>3/16</sup> "	JR
OD of burner throat- check at 4 locations (record max.)	57"	57"	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/4	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 3/8	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3.914 4.14	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8 8 1/2	JR

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓



### Inspection Check List - Complete Burner Module

<b>Customer/Plant:</b>	<b>Contract Number:</b>	<b>Burner No:</b>
Intermountain Power Service	IPSC 04-45606, ABT:A03008	CW-16

(Burner Number is painted inside the top ratchet support channel)

Operational Testing			
Note:- use operator if shop installed - insure correct indicator/pin position		Accept	Init
		✓	
Sleeve damper full stroke operation	✓	✗	
Outer Spin Vanes full stroke operation	✓	✗	
Inner air zone damper full stroke operation	✓	✗	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 <sup>3/16</sup> "	✗
OD of burner throat- check at 4 locations (record max.)	57"	56 <sup>3/4</sup> "	✗
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	✗
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8	✗
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/8	✗
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4	✗
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 7/8 4 1/4	✗
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8 8 9/16	✗

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

### Inspection Check List - Complete Burner Module

Customer/Plant: Intermountain Power Service Contract Number: IPSC 04-45606, ABT-A03008 Burner No: CW-17  
(Burner Number is painted inside the top ratchet support channel)

Operational Testing		Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position		✓		
Sleeve damper full stroke operation	✓		JR	
Outer Spin Vanes full stroke operation	✓		JR	
Inner air zone damper full stroke operation	✓		JR	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 <sup>5</sup> / <sub>16</sub>	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 <sup>3</sup> / <sub>4</sub>	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 <sup>3</sup> / <sub>16</sub>	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 <sup>1</sup> / <sub>4</sub>	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 <sup>1</sup> / <sub>4</sub>	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 <sup>15</sup> / <sub>16</sub> 4 <sup>7</sup> / <sub>8</sub>	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 <sup>3</sup> / <sub>8</sub> 8 <sup>1</sup> / <sub>2</sub>	JR

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027697

### Inspection Check List - Complete Burner Module

Customer/Plant:	Contract Number:	Burner No:
Intermountain Power Service	IPSC: 04-45606, AB1: A03008	CW-18

(Burner Number is painted inside the top ratchet support channel)

Operational Testing			
Note: use operator if shop installed - insure correct indicator/pin position	Accept ✓	Init	Comment
Sleeve damper full stroke operation	✓	<i>JR</i>	
Outer Spin Vanes full stroke operation	✓	<i>JR</i>	Right Ratchet Stiff
Inner air zone damper full stroke operation	✓	<i>JR</i>	

<u>Dimensional Checks</u>	<u>Drawing Value</u>	<u>Actual Value</u>	<u>Init</u>
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 7/8	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/8	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 7/8 4 1/8	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8 8 1/2	JR

<u>Miscellaneous Verifications</u>		
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)		✓
Verify line of sight with registers open and closed for		
a main flame scanner		✓
b igniter scanner		✓
c sight glass		✓
Verify that packing was installed in packing glands		✓
Verify that packing glands are loose (bolts finger tight & taped)		✓
Verify burner number- rotation and fuel injector number agree with GA		✓
Mark WB closure plate with arrow, CW/CCW, and assembly number		✓
Verify spring pins are installed on all manual control rods		✓
Verify all temporary shipping supports are welded and marked with yellow paint		✓
Strip all masking		✓
Verify load includes correct number of loose parts, identified on GA, for each burner		✓
Secure packing list to one burner of each load		

**IP7 027698**

### Inspection Check List - Complete Burner Module

Customer/Plant:	Contract Number:	Burner No:
Intermountain Power Service	IPSC: 04-45606, ABT:A03008	CW-19

(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>		Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position		✓		
Sleeve damper full stroke operation		✓	JR	
Outer Spin Vanes full stroke operation		✓	JR	
Inner air zone damper full stroke operation		✓	JR	

<u>Dimensional Checks</u>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4"	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 3/4"	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 3/16"	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/4"	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4"	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 3/16" 4 1/4"	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8" 8 1/2"	JR

<u>Miscellaneous Verifications</u>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

## Butcher No:

CW-20

(Burner Number is painted inside the top ratchet support channel)

<u>Miscellaneous Verifications</u>		
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)		✓
Verify line of sight with registers open and closed for		
a main flame scanner		✓
b igniter scanner		✓
c sight glass		✓
Verify that packing was installed in packing glands		✓
Verify that packing glands are loose (bolts finger tight & taped)		✓
Verify burner number- rotation and fuel injector number agree with GA		✓
Mark WB closure plate with arrow, CW/CCW, and assembly number		✓
Verify spring pins are installed on all manual control rods		✓
Verify all temporary shipping supports are welded and marked with yellow paint		✓
Strip all masking		✓
Verify load includes correct number of loose parts, identified on GA, for each burner		✓
Secure packing list to one burner of each load		✓

**IP7 027700**

### Inspection Check List - Complete Burner Module

Customer/Plant:	Contract Number:	Burner No:
Intermountain Power Service	IPSC: 04-45606, ABT:A03008	CW- 21
(Burner Number is painted inside the top ratchet support channel)		

Operational Testing	Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	✗	
Outer Spin Vanes full stroke operation	✓	✗	
Inner air zone damper full stroke operation	✓	✗	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4"	✗
OD of burner throat- check at 4 locations (record max.)	57"	56 7/8"	✗
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	✗
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/2"	✗
Distance from face of burner throat to face of flow divider	12 3/8"	11 3/8"	✗
Distance from face of flow divider to face of OBB cast tip	1"	1 1/8"	✗
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	4" 4 1/4"	✗
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8" 8 1/2"	✗

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>			
Note:- use operator if shop installed - insure correct indicator/pin position	Accept	Init	Comment
Sleeve damper full stroke operation	✓	<del>✗</del>	
Outer Spin Vanes full stroke operation	✓	<del>✗</del>	
Inner air zone damper full stroke operation	✓	<del>✗</del>	

<u>Dimensional Checks</u>	<u>Drawing Value</u>	<u>Actual Value</u>	<u>Init</u>
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4	JR
OD of burner throat- check at 4 locations (record max.)	57"	57	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 3/16	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 3/16	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 5/16	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	4" 4 3/16	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8 8 1/2	JR

<u>Miscellaneous Verifications</u>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

### Inspection Check List - Complete Burner Module

Customer/Plant: Intermountain Power Service Contract Number: IPSC: 04-45606, ABT: A03008 Burner No: CW- 23  
 (Burner Number is painted inside the top ratchet support channel)

Operational Testing	Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 <sup>5/16</sup>	JR
OD of burner throat- check at 4 locations (record max.)	57"	57	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 <sup>3/16</sup>	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 <sup>1/4</sup>	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 <sup>1/4</sup>	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 <sup>15/16</sup> 4 <sup>1/4</sup>	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 <sup>3/8</sup> 8 <sup>1/2</sup>	JR

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027703



### Inspection Check List Complete Burner Module

<b>Customer/Plant:</b>	<b>Contract Number:</b>	<b>Burner No:</b>
Intermountain Power Service	IPSC: 04-45606, ABT: A03008	CW- 2 1/4

(Burner Number is painted inside the top ratchet support channel)

Operational Testing	Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 3/8	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 3/4	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 3/16	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/4	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 5/16	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 1/8 4 1/4	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8 8 1/2	JR

Miscellaneous Verifications	✓
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

**ADVANCED  
BURNER  
TECHNOLOGIES**



P.O. Box 410  
711 Route 202, C/O  
Chickens, NJ 07078  
Phone: 908 470-0470, FAX: 908 470-0479

**TELECOPY COMMUNICATION**

**DATE:** 2/11/04

**FAX NO.:** (435) 864-6670

**ATTENTION OF:** Phil Hailes

**COMPANY'S NAME:** Intermountain Power Service Corp.

**NUMBER OF PAGES (INCLUDING COVER SHEET):** 33

**FROM:** Sal Ferrara

**VERIFICATION NUMBER:** (908) 470-0721

**ABT CORPORATION'S TELECOPY NUMBER:**

(908) 470-0479 – Xerox Automatic (Set to receive 24 hours a day)

**REMARKS:** Contract 04-45606 - Burner Inspection Sheets

Phil,

Attached are the inspection sheets you requested for the first 32 burner that have shipped.

Sal

**Inspection Check List - Complete Burner Module**

Customer/Plant: Intermountain Power Service Contract Number: IPSC: 04-45606, ABT.A03008 Burner No: CCW 1  
 (Burner Number is painted inside the top raicher support channel)

<b><u>Operational Testing</u></b>			
Note:- use operator if shop installed - insure correct indicator/pin position		Accept	Init
Sleeve damper full stroke operation	✓	✓	✓
Outer Spin Vanes full stroke operation	✓	✓	✓
Inner air zone damper full stroke operation	✓	✓	✓

<b><u>Dimensional Checks</u></b>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4"	✓
OD of burner throat- check at 4 locations (record max)	57"	56 3/4"	✓
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	✓
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8"	✓
Distance from face of burner throat to face of flow divider	12 3/8"	12"	✓
Distance from face of flow divider to face of OBB cast tip	1"	1 3/8"	✓
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 3/16" 4 1/4"	✓
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8" 8 1/2"	✓

<b><u>Miscellaneous Verifications</u></b>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

Intermountain Power Service | IPSC: 04-45606, ABT:A03008 | CCW-2  
(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>		Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position		✓		
Sleeve damper full stroke operation	✓			
Outer Spin Vanes full stroke operation	✓			
Inner air zone damper full stroke operation	✓			

<u>Dimensional Checks</u>	<u>Drawing Value</u>	<u>Actual Value</u>	<u>Init</u>
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 <sup>5</sup> / <sub>16</sub>	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 <sup>3</sup> / <sub>4</sub>	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 <sup>3</sup> / <sub>16</sub>	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 <sup>7</sup> / <sub>16</sub>	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 <sup>3</sup> / <sub>16</sub>	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 <sup>3</sup> / <sub>16</sub> 4 <sup>1</sup> / <sub>16</sub>	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 <sup>7</sup> / <sub>16</sub> 8 <sup>1</sup> / <sub>2</sub>	JR

<u>Miscellaneous Verifications</u>		
Verify	ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify	line of sight with registers open and closed for	
a	main flame scanner	✓
b	igniter scanner	✓
c	sight glass	✓
Verify	that packing was installed in packing glands	✓
Verify	that packing glands are loose (bolts finger tight & taped)	✓
Verify	burner number- rotation and fuel injector number agree with GA	✓
Mark	WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify	spring pins are installed on all manual control rods	✓
Verify	all temporary shipping supports are welded and marked with yellow paint	✓
Strip	all masking	✓
Verify	load includes correct number of loose parts, identified on GA, for each burner	✓
Secure	packing list to one burner of each load	✓

**Inspection Check List -- Complete Burner Module****Customer/Plant:****Contract Number:****Burner No:**

Intermountain Power Service

IPSC: 04-45606, ABT:A03003

CCW- 3

(Burner Number is painted inside the top ratchet support channel)

<b>Operational Testing</b>	<b>Accept</b>	<b>Init</b>	<b>Comment</b>
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

<b>Dimensional Checks</b>	<b>Drawing Value</b>	<b>Actual Value</b>	<b>Init</b>
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4"	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 7/8"	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 3/16"	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/8"	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 1/8"	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	4" 4 1/4"	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 7/16" 8 9/16"	JR

<b>Miscellaneous Verifications</b>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

### Inspection Check List - Complete Burner Module

Customer/Plant:

Contract Number:

Burner No:

Inlet Mountain Power Service	IPSC: 04-45606 ABT A03008	CCW 4
------------------------------	---------------------------	-------

(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>	Accept	Init	Comment
Note: - use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

<u>Dimensional Checks</u>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/8"	JR
OD of burner throat- check at 4 locations (record max.)	57"	57	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 7/16	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 3/16	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 1/8	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 7/16 4 7/8	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/16 8 9/16	JR

<u>Miscellaneous Verifications</u>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027709

Inspection Check List - Complete Burner Module

Customer/Plant:	Contract Number:	Burner No:
Intermountain Power Service	IPSC: 04-45606, ABT-A03008	CCW- 5

(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>			
Note:- use operator if shop installed			
- insure correct indicator/pin position	Accept	Init	Comment
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

<u>Dimensional Checks</u>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116.14	JR
OD of burner throat- check at 4 locations (record max.)	57"	56.74	
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 3/16	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12"	JR
Distance from face of flow divider to face of OBB cast tip	1"	1.14	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3.78 4.14	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8.36 8.12	JR

<u>Miscellaneous Verifications</u>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

**Inspection Check List - Complete Burner Module****Customer/Plant:****Contract Number:****Burner No:**

Intermountain Power Service

IPSC: 04-45606, ABT:A03008

CCW- 6

(Burner Number is painted inside the top ratchet support channel)

<b>Operational Testing</b>	<b>Accept</b>	<b>Init</b>	<b>Comment</b>
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	JK	
Outer Spin Vanes full stroke operation	✓	JK	
Inner air zone damper full stroke operation	✓	JK	

<b>Dimensional Checks</b>	<b>Drawing Value</b>	<b>Actual Value</b>	<b>Init</b>
Distance from I.S. face of WB closure plate to burner throat	116.28"		
OD of burner throat- check at 4 locations (record max.)	57"	56 3/4	JK
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JK
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 3/16	JK
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/4	JK
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4	JK
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 7/8 4 1/4	JK
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 5/16 8 1/2	JK

<b>Miscellaneous Verifications</b>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027711



### Inspection Check List - Complete Burner Module

Customer/Plant: Intermountain Power Service Contract Number: IPSC: 04-45606, ABT:A03008 Burner No: CCW- 7  
(Burner Number is painted inside the top ratchet support channel)

Operational Testing		Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position		✓		
Sleeve damper full stroke operation		✓	✗	
Outer Spin Vanes full stroke operation		✓	✗	
Inner air zone damper full stroke operation		✓	✗	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116	✗
OD of burner throat- check at 4 locations (record max.)	57"	56 3/4"	✗
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	✗
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 3/16"	✗
Distance from face of burner throat to face of flow divider	12 3/8"	12	✗
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4"	✗
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 7/8" 4 1/4"	✗
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/16" 8 1/2"	✗

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027712

**Inspection Check List - Complete Burner Module**

<b>Customer/Plant:</b>	<b>Contract Number:</b>	<b>Burner No:</b>
Intermountain Power Service	IPSC. 04 45606, ABT:A03008	CCW- 8

(Burner Number is painted inside the top ratchet support channel)

<b>Operational Testing</b>	<b>Accept</b>	<b>Init</b>	<b>Comment</b>
Note:- use operator if shop installed - insure correct indicator/pin position	✓		
Sleeve damper full stroke operation	✓	82	
Outer Spin Vanes full stroke operation	✓	82	
Inner air zone damper full stroke operation	✓	82	

<b>Dimensional Checks</b>	<b>Drawing Value</b>	<b>Actual Value</b>	<b>Init</b>
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4"	82
OD of burner throat- check at 4 locations (record max.)	57"	57"	82
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	82
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8"	82
Distance from face of burner throat to face of flow divider	12 3/8"	12"	82
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4"	82
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	4 4 5/16"	82
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8" 8 1/2"	82

<b>Miscellaneous Verifications</b>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

### Inspection Check List - Complete Burner Module

TRUCK  
4/22/04

**Customer/Plant:**

**Contract Numbers:**

Burner No:

## Intermountain Power Service

IPSC: 04-45608, ABT:A03008

CW-1

(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>			
Note:- use operator if shop installed - insure correct indicator/pin position	Accept ✓	Init	Comment
Sleeve damper full stroke operation	✓	✗	
Outer Spin Vanes full stroke operation	✓	✗	
Inner air zone damper full stroke operation	✓	✗	

<u>Dimensional Checks</u>	<u>Drawing Value</u>	<u>Actual Value</u>	<u>Init</u>
Distance from I.S. face of WB closure plate to burner throat	116.28"	116	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 1/2	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8	JR
Distance from face of burner throat to face of flow divider	12 3/8"	11 7/8	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 3/16	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 3/4 4 1/4	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8 8 1/2	JR

<u>Miscellaneous Verifications</u>		
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)		✓
Verify line of sight with registers open and closed for		
a main flame scanner		✓
b igniter scanner		✓
c sight glass		✓
Verify that packing was installed in packing glands		✓
Verify that packing glands are loose (bolts finger tight & taped)		✓
Verify burner number- rotation and fuel injector number agree with GA		✓
Mark WB closure plate with arrow, CW/CCW, and assembly number		✓
Verify spring pins are installed on all manual control rods		✓
Verify all temporary shipping supports are welded and marked with yellow paint		✓
Strip all masking		✓
Verify load includes correct number of loose parts, identified on GA, for each burner		✓
Secure packing list to one burner of each load		✓

**IP7 027714**

**Inspection Check List - Complete Burner Module**

TRUCK 1

Customer/Plant: Intermountain Power Service Contract Number: IPSC: 04-45606, ABT: A03008 Burner No: 1 CW- 2  
 (Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>		Accept	Init	Comment
Note:- use operator if shop installed - insure correct indicator/pin position		✓		
Sleeve damper full stroke operation		✓	JR	
Outer Spin Vanes full stroke operation		✓	JR	
Inner air zone damper full stroke operation		✓	JR	

<u>Dimensional Checks</u>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/8"	JR
OD of burner throat- check at 4 locations (record max.)	57"	57 3/8"	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8"	JR
Distance from face of burner throat to face of flow divider	12 3/8"	11 7/8"	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4"	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	4" 4 1/4"	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 7/16" 8 1/2"	JR

<u>Miscellaneous Verifications</u>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027715

Inspection Check List - Complete Burner Module

TRUCK 1

Customer/Plant: Intermountain Power Service Contract Number: IPSC 04-45606, ABT-A03008 Burner No: CW-3  
(Burner Number is painted inside the top ratchet support channel.)

Operational Testing			
Note:- use operator if shop installed - insure correct indicator/pin position			
	Accept	Init	Comment
Sleeve damper full stroke operation	✓	JR	
Outer Spin Vanes full stroke operation	✓	JR	
Inner air zone damper full stroke operation	✓	JR	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/8"	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 3/4"	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8"	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8"	JR
Distance from face of burner throat to face of flow divider	12 3/8"	11 3/4"	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4"	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 15/16" 4 1/8"	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 1/2" 8 1/2"	JR

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027716

**Inspection Check List - Complete Burner Module**

TRUCK 1

<b>Customer/Plant:</b>	<b>Contract Number:</b>	<b>Burner No:</b>
Intermountain Power Service	IPSC: 04-45606, ABI A03008	CW-4

(Burner Number is painted inside the top ratchet support channel)

Operational Testing			
Note: - use operator if shop installed - insure correct indicator/pin position	Accept	Init	Comment
Sleeve damper full stroke operation	✓	✗	
Outer Spin Vanes full stroke operation	✓	✗	
Inner air zone damper full stroke operation	✓	✗	

Dimensional Checks	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116	✗
OD of burner throat- check at 4 locations (record max.)	57"	56 3/4	✗
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	✗
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8	✗
Distance from face of burner throat to face of flow divider	12 3/8"	11 7/8	✗
Distance from face of flow divider to face of OBB cast tip	1"	1 3/8	✗
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	4" 4 1/4"	✗
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 1/4 8 1/2	✗

Miscellaneous Verifications	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027717

Inspection Check List - Complete Burner Module

TRUCK 3  
 1/29/04

<b>Customer/Plant:</b>	<b>Contract Number:</b>	<b>Burner No:</b>
Intermountain Power Service	IPSC 04-45606, ABT:A03008	CW- 5

(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>			
Note:- use operator if shop installed - insure correct indicator/pin position		Accept	Init
		✓	
Sleeve damper full stroke operation	✓		JR
Outer Spin Vanes full stroke operation	✓		JR
Inner air zone damper full stroke operation	✓		JR

<u>Dimensional Checks</u>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/16	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 5/8	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/8	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8	JR
Distance from face of burner throat to face of flow divider	12 3/8"	11 3/4	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 3/8	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3 15/16 4 1/4	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 3/8 8 9/16	JR

<u>Miscellaneous Verifications</u>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

IP7\_027718





**Inspection Check List - Complete Burner Module**

**TRUCK 2**

<b>Customer/Plant:</b>	<b>Contract Number:</b>	<b>Burner No:</b>
Intermountain Power Service	IPSC: 04-45606, ABT.A03008	CW- 7

(Burner Number is painted inside the top ratchet support channel)

<u>Operational Testing</u>			
Note: use operator if shop installed - insure correct indicator/pin position		Accept	Init
		✓	
Sleeve damper full stroke operation	✓		JR
Outer Spin Vanes full stroke operation	✓		JR
Inner air zone damper full stroke operation	✓		JR
		Left Ratchet Shift OK	

<u>Dimensional Checks</u>	Drawing Value	Actual Value	Init
Distance from I.S. face of WB closure plate to burner throat	116.28"	116 1/4"	JR
OD of burner throat- check at 4 locations (record max.)	57"	56 3/4"	JR
Verify clearance/play for moving part (1/8" min. over full range) @ assembly of sub-assemblies	1/8" clear	1/16" on 1/16" to 1/8"	JR
Distance from O/S fuel inject mounting plate to O/S fuel injector flange	9 1/4"	9 1/8"	JR
Distance from face of burner throat to face of flow divider	12 3/8"	12 1/8"	JR
Distance from face of flow divider to face of OBB cast tip	1"	1 1/4"	JR
Concentricity, OBB tip lobe to flow divider (record max/min)	Min 4.06" Max 4.32"	3.5/4 4 3/8"	JR
Concentricity, flow divider to burner throat (rec. max/min)	Min 8.37" Max 8.62"	8 1/2 8 1/2"	JR

<u>Miscellaneous Verifications</u>	
Verify ignitor clearance for (test pipe of same OD as igniter support pipe)	✓
Verify line of sight with registers open and closed for	✓
a main flame scanner	✓
b igniter scanner	✓
c sight glass	✓
Verify that packing was installed in packing glands	✓
Verify that packing glands are loose (bolts finger tight & taped)	✓
Verify burner number- rotation and fuel injector number agree with GA	✓
Mark WB closure plate with arrow, CW/CCW, and assembly number	✓
Verify spring pins are installed on all manual control rods	✓
Verify all temporary shipping supports are welded and marked with yellow paint	✓
Strip all masking	✓
Verify load includes correct number of loose parts, identified on GA, for each burner	✓
Secure packing list to one burner of each load	✓

100 THER-13 - INSPECTOR IS A BURNER ON  
ALL OF THE INSPECTOR POINT TO THE A GIVE  
BURNER BURNERS

# BURNER INSTALLATION CHECK LIST

FRONT

NO.	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
E1										
E2										
E3										
E4										
E5										
E6										
7th										
A1										
A2										
A3										
A4										
A5										
A6										
8th										
F1										
F2										
F3										
F4										
F5										
F6										
5th										
B1										
B2										
B3										
B4										
B5										
B6										

REAR

NO.	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
D1										
D2										
D3										
D4										
D5										
D6										
7th										
H1										
H2										
H3										
H4										
H5										
H6										
6th										
C1										
C2										
C3										
C4										
C5										
C6										
5th										
G1										
G2										
G3										
G4										
G5										
G6										

NOTES: CBJ ARE THE INITIALS OF CHARLES B. . HE IS THE  
CERTIFIED WELDING INSPECTOR FOR THE HIS INITIALS MEAN HE HAS  
INSPECTED AND ACCEPTED THE WELDS INITIALED FOR EACH OF THE BURNERS.

IP7\_027721



COMPLETION REPORT

Date 3/17/04

## Completion Report For Intermountain Power Services

Subject: New Burner Installation (7th Floor, ~~Front~~ and Rear)  
(A-Row)

Job # 80960

Completion Date 3/17/04

IPP Representative

TEI Representative



TEI is a 501(c)(3) non-profit organization. For more information, please visit our website at [www.tei.org](http://www.tei.org).

Date: 3/17/04

## Completion Report For Intermountain Power Services

Subject: New Burner Installation (5th Floor, Front and Rear)  
(B ROW)

Job # 80960

Completion Date 3/17/04

IPP Representative [Signature]

TEI Representative Charles James



## Completion Report For Intermountain Power Services

Subject: New Burner Installation (8th Floor, **Front** and Rear)

**E-ROW**

Job # 80960

Completion Date 3/17/04

IPP Representative 

TEI Representative 



CONSTRUCTION SERVICES, INC.

Date 3/17/04

## Completion Report For Intermountain Power Services

Subject: New Burner Installation (6th Floor, ~~Front~~ and Rear)  
(F-Row)

Job # 80960

Completion Date 3/17/04

IPP Representative [Signature]

TEI Representative C. J. [Signature]



Date 3/17/04

## Completion Report For Intermountain Power Services

Subject: New Burner Installation (6th Floor, Front and Rear)  
(C-ROW)

Job # 80960

Completion Date 3/17/04

IPP Representative [Signature]

TEI Representative [Signature]



Date 3/17/04


## Completion Report For Intermountain Power Services

Subject: New Burner Installation (8th Floor, Front and Rear)  
(D-ROW)

Job # 80960

Completion Date 3/17/04

IPP Representative 

TEI Representative 





TEI CORPORATION 800-879-4800

Date 3/17/04

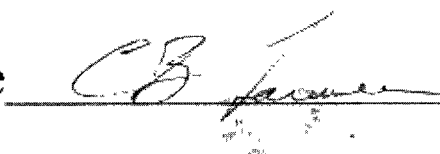
## Completion Report For Intermountain Power Services

Subject: New Burner Installation (5th Floor, Front and Rear)  
(G-ROW)

Job # 80960

Completion Date 3/17/04

IPP Representative 

TEI Representative 



CONSULTING SERVICES INC.

Date 3/17/04

## Completion Report For Intermountain Power Services

Subject: New Burner Installation (7th Floor, Front and Rear)

Job # 80960

H-ROW

Completion Date 3/17/04

IPP Representative

TEI Representative

This Shipping Order Must be legibly filled in, in Ink, in Indelible Pencil, or in Carbon and retained by the Agent.

Shipper's # 21118  
Agent's No. A03-008-41

Carrier

at PCW 2-5-04 from 100 Parish St. Wayne, Mo

Consigned to Intermountain Gen Station (Mail or street address of consignee - For purposes of notification only.)  
Destination 530 W. Brushwellman Rd State of Utah Zip Code 84624 County of \_\_\_\_\_  
City \_\_\_\_\_

Receiving Delta Delivering Carrier Vehicle \_\_\_\_\_ or Car Initial \_\_\_\_\_ No. \_\_\_\_\_  
Collect On Delivery \_\_\_\_\_

and remit to: Phone 435-864-6670  
Contract 04-45606 Street \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

No.	Description of Articles, Special Marks, and Exceptions	Weight (Sub. to Car.)	Class or Rate	Check Column	State
1	Gen Regulator	CCW-1			
1	"	CCW-2			
1	"	CCW-3			
1	"	CCW-4			
1	24 hr notice reg'd call				
1	James Nelson reg'd loading				
1	M. Sat 7:00-5:00 leave message				

C. O. D. charge to be paid by { Shipper [ ] Consignee [ ]

Subject to Section 7 of conditions, this shipment is to be delivered to the consignee without recourse on the part of the carrier. The consignee shall sign the following statements:  
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

If charges are to be prepaid, write stamp here, "TO BE PREPAID."

Prepaid

Received \$ \_\_\_\_\_ to apply to prepayment of the charges on the property described herein.

Agent or Cashier

Per \_\_\_\_\_ (the signature here acknowledges only the amount prepaid.)

Charges Advanced

**Memorandum**

is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property claimed herein, and is intended solely for filing or record.

Shipper's # 1118 Agent's No. 1703-108-41

**Carrier**

at 107th Ave from 107th Ave

Consigned to 107th Ave (Mail or street address of consignee - For purposes of notification only.)

Destination 107th Ave State of UTAH Zip Code 84424 County of Utah

Routing 107th Ave Delivering Carrier 107th Ave Vehicle or Car Initial 107th Ave No. 107th Ave

Collect On Delivery 107th Ave and remit to: 107th Ave Street 107th Ave City 107th Ave State 107th Ave

Subject to Section 7 of conditions, this shipment is to be delivered to the consignee without recourse on the carrier's part. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Received \$ 107th Ave to apply to prepayment of the charges on the property described herein.

Agent or Cashier 107th Ave

Signature of Consignee 107th Ave

It charges are to be prepaid while a stamp here, "TO BE PREPAID."

Received \$ 107th Ave to apply to prepayment of the charges on the property described herein.

Agent or Cashier 107th Ave

Signature of Consignee 107th Ave

It charges are to be prepaid while a stamp here, "TO BE PREPAID."

Received \$ 107th Ave to apply to prepayment of the charges on the property described herein.

Agent or Cashier 107th Ave



is an acknowledgment that a bill of Lading has been issued and is not the original bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's #

**Agent's No.**

THIS COVED, subject to the classifications and tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading,

from

[illegible]

(Mail or street address of consignee. For purposes of notification only.)

Consigned to \_\_\_\_\_

Destination PO Box 10000 State of UT Zip Code 84402 County of Utah

Routing \_\_\_\_\_  
 Street \_\_\_\_\_  
 City \_\_\_\_\_  
 Delivering Vehicle  
 Carrier \_\_\_\_\_ or Car Initial \_\_\_\_\_ No. \_\_\_\_\_

Collect On Delivery	and remit to: D. A. Mc 435-804-6670	C. O. D. change to be paid by	Shipper Consignee

Subject to Section 7 of conditions,  
this shipment is to be delivered to it  
consignee without recourse on the co

No.	Description of Articles, Special Marks, and Exceptions	Weight (Lbs. or Ozs.)	Class or Rate	Check Column
	Register	CW-13		
	"	CW-14		
	"	CW-15		
	"	CW-16		
	Registers (single)			
	107 papers. Reg. of cases			
	James Nelson uncollected			

NOTE: Where the rate is dependent on weight, the law requires that the bill of lading shall state whether it is "carton's or shipper's weight."

Signature of the person whose name appears on the title specifically in writing the agreed or declared value of the property.

This Memorandum is an acknowledgment of receipt of the property described in the Original Bill of Lading, and is intended solely for filing or record.

Original Bill of Lading, not a copy or duplicate, covering Shipper's # 21113 and herein, and

**Carrier**

Agent's No. 1703-08-411

RECEIVED, subject to the stipulations and tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading.

at 161st from 100 Transco Warehouse

to be delivered to the consignee at the place named below, which said company (the carrier) undertakes to deliver to the consignee at the place named below, subject to the conditions and tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading, and to the conditions and tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading, and to the conditions and tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading.

Consigned to 100 Transco Warehouse (Mail or street address of consignee - For purposes of notification only.)

Destination 100 Transco Warehouse State of UTAH Zip Code 84624 County of Utah

Routing Utah Delivering Carrier Utah Vehicle or Car Initial No.

Collect On Delivery \$ and remit to: Utah Street 455-864-6670 City Utah State Utah

Weight (Sub. to Car.) CCW-17 Check Column CCW-18

Description of Articles, Special Marks, and Exceptions CCW-19

CCW-20

Utah

Utah

Utah

Utah

Utah

Utah

Utah

Utah

Utah

Utah

Utah

Utah

Utah

Utah

Utah

# This Memorandum

is intended solely for filing or record.

is an acknowledgment that a bill of lading has been issued and is not the original bill of lading, nor a copy or duplicate, covering the property named herein, and Shipper's # 29978

## Carrier

Agent's No. A 03-108-411

RECEIVED, subjecting the classifications and tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading.

at SLC on 17-04 from 1600 Plaza Dr. Hayward, CA

PROPERTY OF THE SHIPPER. The carrier is not responsible for loss or damage to property unless it is shown that the carrier was negligent in its handling of the property. The carrier is not responsible for loss or damage to property unless it is shown that the carrier was negligent in its handling of the property. The carrier is not responsible for loss or damage to property unless it is shown that the carrier was negligent in its handling of the property.

Consigned to Water Management Station (Mail or street address of consignee. For purposes of notification only.)

Destination 200 South Main Rd State of Utah Zip Code 84024 County of Utah

Routing SLC Delivering Carrier Union Pacific Vehicle or Car Initial U No. 1

Collect On Delivery and remit to: Phone 435-804-6670

City SLC State Utah

Weight (Sub. to Car.) 21 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 22 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 23 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 24 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 25 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 26 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 27 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 28 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 29 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 30 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 31 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 32 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 33 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 34 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 35 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station

Weight (Sub. to Car.) 36 Class or Rate 1 Check Column 1

Description of Articles, Special Marks, and Exceptions Water Management Station







# This Memorandum

is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property insured herein, and is intended solely for filing or record.

Shipper's #

Carrier

Agent's No.

from

a)

Consigned to

Destination

Street

City

State of

Zip Code

County of

Vehicle

Delivering Carrier

or Car Initial

No.

Collect On Delivery

and remit to:

C. O. D. change to be paid by

Shipper

Consignee

Street

City

State

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

Weight

Column

Class or Rate

Check

Column

7-7107 (3 PART FORM)

This Shipping Order Must be legibly filled in, in Ink, in Indelible Pencil, or in Carbon and retained by the Agent.

Shipper's # 21118

Carrier Agent's No. AD3-008-416

Effective subject to the classifications and tariffs in effect on this date and the issue of this Shipping Order.

at Delta 1-29-04 from 100 Parasholt Way  
to be paid by the shipper or consignee, as indicated by the checkmark in the box below. If the shipper is to pay, the shipper must indicate the amount to be paid by the shipper in the box below. If the consignee is to pay, the consignee must indicate the amount to be paid by the consignee in the box below. If the shipper is to pay, the shipper must indicate the amount to be paid by the shipper in the box below. If the consignee is to pay, the consignee must indicate the amount to be paid by the consignee in the box below.

Consigned to Intermountain Gen Station (Mail or street address of consignee - For purposes of notification only.)

Destination 8500 Bush Williams Rd State of UT Zip Code 84604 County of

Routing Delta Delivering Carrier  Vehicle or Car Initial  No.

Collect On Delivery  and remit to: Adone 435-804-6670

Contract 04-45006 City  State

Quantity	Description of Articles, Special Marks, and Exceptions	Weight (Sub. to Car.)	Class or Rate	Check Column
1	Air Regulator CW-13			
1	Air Regulator CW-14			
1	Air Regulator CW-15			
1	Air Regulator CW-16			
	24 hr Justice Regd Cash			
	James Nelson pending			

Subject to Section 7 of conditions, this shipment is to be delivered to the consignee without recourse on the consignor. The consignor shall sign this following statement:  
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

If charges are to be prepaid, write on stamp here: "TO BE PREPAID."

Prepaid

Received \$  to apply to prepayment of the charges on the property described hereon.

Agent or Cashier

Pro (The signature here acknowledges only)

is intended solely for filing or record.

Shipper's #

Carrier

Agent's No.

at from

at

to

(Mail or street address of consignee - For purposes of notification only.)

Consigned to

Destination

State of

Zip Code

County of

City

Delivering Carrier

Vehicle

Routing

or Car Initial

No.

Collect On Delivery

and remit to:

Street

City

State

No.

Description of Articles, Special Marks, and Exceptions

"Weight" (Sub. to Car.)

Class or Rate

Check Column

C. O. D. charge to be paid by

Shipper

Consignee

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignee, the consignee shall sign the following statements:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor.)

If charges are to be prepaid, write or stamp here, "TO BE PREPAID."

Received \$ to apply to prepayment of the charges on the property described hereon.

Agent or Cashier

Per (The consignor here acknowledges only)

for the use of the carrier of Lading, nor a copy or duplicate, covering the property named herein, and Shipper's #

Carrier

Agent's No.

114 from

at

(Mail or street address of consignee - For purposes of notification only.)

Consigned to

Destination

Street

City

State of

Zip Code

County of

Routing Collect On Delivery

Delivering Carrier

Vehicle or Car Initial

No.

and remit to:

(US) 264-6670

Street City State

Description of Articles, Special Marks, and Exceptions

Weight (Sub. to Car.)

Cases or Pallets

Check Column

C. O. D. charge to be paid by Shipper or Consignee

Subject to Section 7 of conditions, this shipment is to be delivered to the consignee without recourse on the consignor. The consignor shall sign the following statements:  
The carrier shall not make delivery on this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

If charges are to be prepaid, while on stamp here, "TO BE PREPAID."

Received \$ to apply to prepayment of the charges on the property described hereon.

Agent or Cashier

Per



# DELIVERY RECEIPT

Date 7 5 04	Origin Station PIT	Manifest No.
Company Unit Number 6661		Trailer Number 8661 T

Shipper	Consignee Interstate Union Carriers Station
Street Address 1000 N	Street Address 50 W 10th St 10211 Mon Rd
City and State Desoto NJ	City and State Desoto UT
Shipper No. or C.B. No.	Special Instructions

PIECES	DESCRIPTION AND MARKS	WEIGHT
	1st Register 1000	20.000
	1000	
	1000	
	1000	

Shipper's Seal Nos. Origin		Shipper's Seal Nos. Destination	
Driver's Signature ✓ [Signature]		Received Above Described Freight in Good Order Except As Noted	
No. of Pieces 4	By X [Signature]		Date 7/5/04

PAID 75123-1105

1229 EAST PLEASANT RUN • P.O. BOX 1105 • DESOTO, TEXAS 75123-1105

COPY -- CONSIGNEE

IP7\_027742



# DELIVERY RECEIPT

Date 2-10-04	Origin Station	Manifest No.
Company Unit Number 6102	Trailer Number 4827	

Shipper's Name PACER	Consignee Inter Mountain Gen. Station
Shipper's Address 1000 Parish Dr.	Street Address 850 W. Brushwell Road
City and State Wayne, NJ 07470	City and State Delta, Utah 84624
Shipper's Phone 1118	Special Instructions

DESCRIPTION AND MARKS		WEIGHT
Air Rpt. 8-1		25000
CCW	5	
"	6	
"	7	
"	8	

Shipper's Seal Nos. Origin	Shipper's Seal Nos. Destination
Signature Hans	Received Above Described Freight in Good Order Except As Noted
No. of Pieces 4	By X Bobby Emrick
	Date 2-10-04

1229 EAST PLEASANT RUN • P.O. BOX 1105 • DESOTO, TEXAS 75123-1105

COPY TO CONSIGNEE

IP7\_027743



Phone  
(435) 896-4417

DELIVERY AND DETENTION RECORD

ADMIRAL-MERCHANTS MOTOR FREIGHT, INC.

215 SOUTH 11TH STREET, MINNEAPOLIS, MN 55403 PHONE (800) 972-8864

TRIP NO. 261603

PRO NO.

SHIPPER'S NO. 21118

SHIPPING DATE 12 20 1974

CONSIGNEE *W. L. 707, 67*

ADDRESS

DESTINATION

WEIGHT  
(SUB. TO CORR.)

DESCRIPTION OF ARTICLES

NO PKGS

TIME RECORD

DATE

PREARRANGED TIME

ARRIVED AT PLANT

LOADING OR UNLOADING COMPLETED

RELEASED FROM PLANT

LUNCH IN PLANT

LOADING - UNLOADING

DRIVER MUST INDICATE A.M. OR P.M.

DATE REC'D

REC'D BY

NAME OF COMPANY

VEHICLE NO

DRIVER

ORIGINAL WHITE ADMIRAL

YELLOW COPY - CUSTOMER

PINK COPY - DRIVER



# DELIVERY RECEIPT

Date 2-17-74	Origin Station PET	Manifest No 830332
Company Unit Number 8542		Trailer Number JTX 126

Shipper C. W. W.	Consignee Intermountain Lumber Co.
City and State Salt Lake City, UT	Street Address
City and State Delta, UT	Special Instructions

PIECES	DESCRIPTION AND MARKS	WEIGHT
1	Air Registers	
1	Brass Rings	
	CCW 17/18/19 920	
		28,200

Shipper's Seal Nos. Origin	Shipper's Seal Nos. Destination
Driver's Signature ✓ [Signature]	No. of Pieces J
Received Above Described Freight In Good Order Except As Noted	
By X B. EMRICK	
Date 2/17/74	

1229 EAST PLEASANT RUN • P.O. BOX 1105 • DESOTO, TEXAS 75123-1105

COPY -- CONSIGNEE

IP7\_027746



# DELIVERY RECEIPT

Date 2-17-04	Origin Station RPC	Manifest No 827740
Company Unit Number 8943		Trailer Number 9625

Shipper's Name W	Consignee Intermountain Power Co
Street Address 1000 W 15TH DR	Street Address 850 W Brush Wellman Rd
City and State Albany NJ	City and State Delta Utah
Shopper No. or GBU No.	Special Instructions

PIECES	DESCRIPTION AND MARKS	WEIGHT
4	BURNERS CC# 9, 10, 11 & 12	25000
	ARRIVED IN GOOD CONDITION ON TIME	

Shipper's Seal Nos. Origin	Shipper's Seal Nos. Destination
Driver's Signature ✓ Bobby L. Barnes	No. of Pieces
Received Above Described Freight In Good Order Except As Noted	
By X [Signature]	Date

PALM-105 (R 1-90)

1229 EAST PLEASANT RUN • P.O. BOX 1105 • DESOTO, TEXAS 75123-1105

COPY — CONSIGNEE

IP7\_027747



# DELIVERY RECEIPT

Date 2/23/04	Origin Station	Manifest No. PIT832156
Company Unit Number 9173		Trailer Number 9173A

Shipper Passaic County Welders 100 Parish Drive Wayne NJ 07470 Phone: 201-261-2118 Fax: 201-261-2118	Consignee Intermountain Gen Station 850 Brushwellman Rd Littleton CO 80124 Special Instructions
---	---

DESCRIPTION AND MARKS		WEIGHT
1	Air Register CCW-21	
1	" 22	
1	" 23	
1	" 24	
	24 Angle Rings	

Shipper's Seal Nos. Destination	Received Above Described Freight in Good Order Except As Noted
Driver's Signature ✓ K. K. + Melody Rung	No. of Pieces 4
By X Bobby Emrick	Date 2/23/04

1229 EAST PLEASANT RUN • P.O. BOX 1105 • DESOTO, TEXAS 75123-1105

IP7\_027748

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 2/9/2004 12:48:08 PM  
**Subject:** Re: Fwd: burner wts

Howard, I know another engineer that may be able to shed more light, I will check with him.  
Alan

>>> Howard Hamilton 2/9/2004 12:46:29 PM >>>

The attached email from Alan calls out a wt of 9000 lbs for the B&W Mark V Burners we have installed in Unit 2. Though the email is from B&W I'm a little skeptical based on the fact the they did not have a published wt for our burners and they took a WAG of 9000 lbs. Do you have contacts at B&W that can verify this wt.

Note that Copalite will not be used on the outlet of the coal elbows. ABT is providing a 2"wide tape gasket for this connection.

>>> Alan Dewsnup 2/9/2004 11:02:36 AM >>>

**From:** Alan Dewsnap  
**To:** Hamilton, Howard  
**Date:** 3/5/2004 4:50:06 PM  
**Subject:** 3-1/2" X 3/4" Bolts

Howard,

I am guessing those above mentioned bolts must have been drop shipped. They didn't show today, I will check with Nancy on Monday morning and verify delivery for you.

Alan

**IP7\_027750**

**From:** Alan Dewsnap  
**To:** Hamilton, Howard  
**Date:** 1/16/2004 4:28:47 PM  
**Subject:** B & W Updates

Howard, I chatted briefly with my B & W contact. He does not have his info. together for today. He should be in touch again on Monday.  
Alan



**From:** Alan Dewsnap  
**To:** Hamilton, Howard  
**Date:** 1/6/2004 9:47:46 AM  
**Subject:** Boiler Swing valve isolation disks.

Howard, I have spoke with Dale Hurd and have been allowed by him to order in twelve more blank valve disks which we will machine and have ready for your and my needs during the upcoming Unit 2 Outage.

If you have any other questions, get in touch. Alan

**From:** Alan Dewsnap  
**To:** Howard Hamilton  
**Date:** 5/5/2004 3:21:56 PM  
**Subject:** Burner replacement project, Base WO 03-96033

Howard,

Just a note to see if you are closing out you Engineering WO's in the above WO series. Once all the loose ends are taken care of, its good to get them closed.

Thanks, Alan

**IP7\_027753**

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 2/3/2004 4:33:23 PM  
**Subject:** Burner Replacement Project

Howard,  
B & W has confirmed that the Burner Mounting Sleeve, item "AL" on drawing no. 269375E is made of mild steel, SA 106B.  
Alan

**From:** Alan Dewsnap  
**To:** Hamilton, Howard  
**Date:** 2/10/2004 10:49:20 AM  
**Subject:** Hi temp red RTV

Howard, I have ordered against your lead Burner WO 96033-0, (6 ea) buckets of this material. It is staged and ready for delivery when you need it.  
Alan

**IP7\_027755**

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 12/30/2003 3:39:12 PM  
**Subject:** Outage Burner Project

Howard,

I went up to one of the Burners and evaluated the gasketing. It appears that under the valve body that you will be removing we will be using the same part as sn 13223. This sn is the wider of the two fiberglass gaskets. As a result of this survey, I have created another Stock Req. for 48 additional gaskets. Should you have any other questions, call me.

Alan

**IP7\_027756**

**From:** Alan Dewsnap  
**To:** Hamilton, Howard  
**Date:** 3/5/2004 10:25:22 AM  
**Subject:** Parts Update

Howard,

I tried to catch you on the radio, no luck. Your update is this; your 2-1/2" x 3/4" bolts were delivered and should be in place on the sides of the boiler. I was able to get 10 buckets of the "Fine Load" wear compound delivered on Monday March 8, with the balance due in on Tues. or Wed., March 9 or 10. I think you are covered with regards to your current needs.

Regards, Al

**IP7\_027757**

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 3/6/2004 1:39:21 PM  
**Subject:** Sub wo. for fitting Horizontal Fuel Diffusers to elbows.

Howard,

Your WO is 96033-31 to track the expenses incurred to fit the diffusers for back charging to ABT.

Regards, Alan

**IP7\_027758**

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 2/5/2004 7:51:15 AM  
**Subject:** Sub. WO for TEI to test ss thermocouple taps

Howard, The WO is 96033-12.  
Al



**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 2/26/2004 1:46:15 PM  
**Subject:** Sub. wo to 96033 to modify abb flame scanners.

Howard,

Your sub. WO is: 96033-22.

Regards, Alan

**From:** Alan Dewsnap  
**To:** Hamilton, Howard  
**Date:** 2/26/2004 1:52:21 PM  
**Subject:** Sub. WO. for tracking Larry Isley's time invested on burner replacement.

Howard,

This WO. is 96033-23.

Regards, Alan

**IP7\_027761**

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 2/29/2004 3:17:24 PM  
**Subject:** Sub. WO's. for additional burner work.

Howard,

WO. 96033-27 is for TEI to modify and repair existing valves.  
WO. 96033-28 is for TEI to recondition old ignitors.

Regards, Alan

**IP7\_027762**

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 2/27/2004 9:42:24 AM  
**Subject:** Technical services supervision time tracker wo for burner replacement.

Howard,

The sub WO is 96033-24.

Regards, Alan

**IP7\_027763**

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 3/2/2004 4:35:17 PM  
**Subject:** TEI tracking wo to install vfd's.

Howard,

Your sub WO is 96033-30 to cover time and materials for this work.

Alan

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 2/28/2004 2:22:31 PM  
**Subject:** TEI materials and labor cost trackers to install 3/4" soc. weld piping.

Howard,

The WO for the labor side is: 96033-25.  
The WO for the material side is: 96033-26.

Hope this helps, Al

**From:** Alan Dewsnup  
**To:** Hamilton, Howard  
**Date:** 2/25/2004 5:00:44 PM  
**Subject:** Update on burner parts.

Howard,

I took a tour in Receiving. Today the last 32 gaskets arrived, sn 13236. I, as a result of our meeting today, ordered 15 additional 22" dresser coupling rubber gaskets. We may need a few if we disturb the burner supply pipes much. I will have the items delivered to the TEL trailer tomorrow. Any other items, get in touch.

Alan

**IP7\_027766**

**From:** Alan Dewsnap  
**To:** Hamilton, Howard  
**Date:** 2/9/2004 3:41:13 PM  
**Subject:** WO for burner dampers to be proved.

Howard, The WO number is "96033-16" to cover that work.  
Alan



**From:** Bernell Warner  
**To:** Howard Hamilton  
**Date:** 2/9/2004 10:51:10 AM  
**Subject:** NORTH BURNER ACCESS

I PUT THE DRAWING FOR THE NORTH BURNER FLOOR CRAIN ACCESS INTO THE  
IGS03-04-UNIT 2 MODIFIED BURNERS FILE

**IP7\_027768**

**From:** Bret Kent  
**To:** Howard Hamilton  
**Date:** 2/7/2004 11:58:39 AM  
**Subject:** 4 Burners Onsite

Howard,

TEI unloaded 4 burners Saturday at 11:30. No damage noted. The burners are setting on the west side of U2 fan room.

I took pictures of them on the truck as received. Pictures are still on the camera in my office if you want them.

Bret

**CC:** James Nelson; Phil Hailes

**IP7\_027769**

**From:** Bret Kent  
**To:** James Nelson  
**Date:** 3/7/2004 6:45:19 PM  
**Subject:** Sunday 5:00 Update

**Phong -**

Leak in generator fixed (welded). Leak test shows that the repair was successful. TurboCare complete with drop check on diaphragm. UT/MT on Field Bore complete. Turbine NDE 50% complete. Need to coordinate with Longview to make sure that resources are onsite (Mike Fratt) to complete. **Phil -**

OFA 90's have the same interference problem as last year. Problem was caught prior to installation. Fix is being implemented. A portion of Burner and OFA crew will be going to 10 hour shifts starting Monday. **Howard -**

All the old burners are out and on the ground. All ABT burners are in holes. 5th Floor burners aligned and will be welded out by Tuesday. Electricians can start on 5th floor Tuesday. Coal valves in on 5th and 6th floors. Coal valves refurbished up to the 7th floor. Elbows on the 5th floor. Fuel oil lines on 5th floor almost complete. Tubing for Pitot tubes started. VFD complete to the 6th floor. **Craig -**

All scaffolded areas in the boiler are inspected. Report and punchlists will be completed Monday. Heat treat on secondary heat torque bracket #4 is in progress. Will be done Monday. Backpass repairs underway. (IPSC crew) **Dean -**

25 panels sounded and hanging. Root and hot pass complete on 18 panels. OFA panels are all welded and capped. Need an official stance on welding membrane. TEI has started welding the membrane from 1 side only (windbox side). Is IPSC going to require welding on both sides or just 1 side. And if we require only one, should it be the furnace side? **Bret -**

Half the stay plate extensions are tacked in place. Plan to have them welded out by Wednesday. T- Bars are onsite. Mounting slots are wrong. A couple of options for a fix are being explored.

**CC:** Craig Stumph; Dean Wood; Howard Hamilton; Phil Hailes; Phong Do

**IP7\_027770**

**From:** Bruce McCann  
**To:** Hamilton, Howard  
**Date:** 1/31/2004 3:57:53 AM  
**Subject:** Outage Stuff

Howard

I am the Tagging Coordinator for Outage. Any tagging requests or concerns you might have need to be directed to me so they can addressed

I will make arrangements to meet with you and go over in detail the clearances that I will make for burner removal / replacement and any other concerns you might have.

Thanks

Bruce McCann

**IP7\_027771**

**From:** CHRISTINA SPENCER  
**To:** HOWARD HAMILTON  
**Date:** 7/1/2004 1:54:26 PM  
**Subject:** Work order 03-96033-41 Has been Closed

PROVIDE PAINT (TOUCH-UP) CRAFT SUPPORT FOR REMOVAL OF EGRESS  
LADDERS IN UNIT-2.

Work assigned to crew 33

Total Hours 20.00

Total Material Cost 0.00

**IP7\_027772**

**From:** CHRISTINA SPENCER  
**To:** HOWARD HAMILTON  
**Date:** 4/27/2004 1:03:13 PM  
**Subject:** Work order 03-96033-42 Has been Closed

PAINT BURNER RIGGING BEAM USED TO RAISE NEW ABT BURNERS AND LOWER OLD B&W BURNERS. BEAM IS LOCATED AT M203 9TH FLOOR. CONTACT HOWARD HAMILTON IF YOU HAVE ANY QUESTIONS.✓AND 1TEF-BV-36. THE OLD VALVES LEAKED-BY.

Work assigned to crew 33

Total Hours 23.00

Total Material Cost 0.00

**IP7\_027773**

**From:** Dean Wood  
**To:** Hamilton, Howard  
**Date:** 10/17/2005 4:40:01 PM  
**Subject:** Need INFO on ABT Burners .... ASAP

Howard,

George came over and asked us to dig up information on the new ABT burners. Specifically he wants photos of the new burners (I saw a lot of these in the project file so this shouldn't be a problem).

Also, he wants a copy of the O&M manual supplied by ABT on the burners. **This is where I need your help.**

Please try and dig up a copy of the operating manual and get it to me. If you have any photos not included in the project file, get me a file of those as well.

Thanks,

Dean

**IP7\_027774**

**From:** Howard Hamilton  
**To:** Jerry Finlinson  
**Date:** 2/20/2004 8:12:44 AM  
**Subject:** Connecting to ABB Scanners

Attached photos explain request for clarification concerning how ABB will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing 2" flex hose to the new ABB scanner.

**CC:** James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

**IP7\_027775**



**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/20/2004 1:44:40 PM  
**Subject:** Fwd: Re: Response from ABB Regarding Connecting Cooling Air Hose to ABB Scanners

Based on the response provided below proceed with using the existing 1 1/2" flex hose using a 2" nipple and 2"x1 1/2" reducer to connect the ABB Scanned to the existing 1-1/2" flex hose.

Note: Jerry advised that the packing connection to seal the gap between the scanner and the 3" pipe connection on the front plate of the ABT burner is not on site. ABB is making arrangements to have the packing connection shipped out next week.

>>> Jerry Finlinson 2/20/2004 1:33:21 PM >>>  
Here's Bill Clark's latest response.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 12:38:16 PM >>>

Jerry,

The 6" above furnace pressure is the standard. Your Hoffman blowers sound as if they would be adequate at 13.5". Our scanners are good up to 900 degrees F on the hot end. The air helps keep the electronics head temperate and creates a positive purge through the lens assembly to keep it clean. Restricting the input to 1.5" pipe would not cause a problem.

Bill

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/20/2004 01:57 PM

02/20/2004 01:57 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

**IP7\_027776**

To: William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "Jim Knapp"  
<[JIM-KNAPP@ipsc.com](mailto:JIM-KNAPP@ipsc.com)>,  
"James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>  
Subject: Re: Response from ABB Regarding Connecting  
Cooling Air Hose to ABB  
Scanners

William,  
We currently have Baily Flame On scanners with a 1.5 inch cooling  
air line,  
the air is coming from a Hoffman Flame Scanner Blower and 6" header.  
We'd like to adapt the 1.5 inch  
line to your 2" input connection. Do you think that would be  
sufficient.  
Do these new scanners take about the same cooling air as the Bailey  
Flame On system?  
We'd rather not repipe our system unless absolutely necessary.

I'm not aware of any CFM measurements, should we try and get some?

I noticed in the manual that you recommend 6" positive pressure and 30  
cfm at 120F.  
Our Hoffman blowers create pressure from 0-27 inches water.  
There is an alarm if the pressure drops below 13 inches and  
auto starts the backup blower if the pressure drops below 12.5 inches  
water.  
Since our furnace runs at -.5 inches, we have a pressure drop of at  
least 13.5 inches probably much greater.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 10:38:58 AM >>>

Jerry,

We see many methods, the preference would be a flexible 2" hose for  
serviceability  
and to allow for boiler expansion.

**IP7\_027777**

I have enclosed a drawing to show a hose arrangement we have supplied historically.

Regards,

William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry  
Dohalick/USINY/ABB@ABB US01,  
William M. Clark/USPOA/ABB@ABB US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT  
burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to  
your scanner cooling port.  
Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624

**IP7\_027778**

435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>

Attached photos explain request for clarification concerning how ABB will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing 2" flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this note  
on February 20 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Existing Scanner.jpg" has been removed from this  
note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)  
(See attached file: B949738-Model.pdf)

(See attached file: C.htm)

**CC:** James Nelson; Jerry Finlinson; Phil Hailes

**IP7\_027779**

**From:** Howard Hamilton  
**Route:** James Nelson  
**Date:** 4/27/2004 10:35:27 AM  
**Subject:** Back Charges to ABT

Attached is a table listing six back charges against the 48 burners installed in Unit 2.

These charges total to \$23,519. TEI did all of the work associated with the back charges.

TEI's basic mechanic and welder rates to IPSC were \$33.67 an additional charge per hour of \$3.75 was added to cover tools and consumables.

IPSC requests reimbursement for the charges listed.

**From:** Howard Hamilton  
**To:** James Nelson  
**Date:** 4/26/2004 1:32:47 PM  
**Subject:** ABT Back charges

There are approximately \$26,170 worth of back charges against ABT for the installation of burners during the Unit 2 outage.

The attached table give a break down of the charges by work release and Purchase Order.

I did not put in TEI's final charges as you have the paper work for them. However, they should be close to the TEI estimates as shown.

**WO 9396033-00**  
**INSTALL 48 LOW NOX BURNERS**  
**PO/CONTRACT 04-45618**  
**SPEC 45618**  
**ACCOUNT 00-2SBX-402**  
**\$28,761 of BACK CHARGES TO ABT**

WO# SUB	TEI EST	TEI FINAL	1 <sup>st</sup> REQ	2 <sup>nd</sup> REQ	POA	COMMENTS
012	\$474	\$408	200214	200476	004	AIR TEST TUBING 1 <sup>ST</sup> 16 BURNERS
020	\$3232	\$3562	200214	200474	003	RMVE AND REPLACES ABT SEAL RINGS
021	\$5153	\$6098	200214	200520	006	DONUTS TO SEAL GAPS INGNTR/SCNNR
022	\$9356	\$4092	200214	200606	007	MDFY PKNG GLAND FOR ABB SCNNR
031	\$4232	\$2695	201214	200101	013	MODIFY HFDs BACK CHARGE
	\$22447	\$16855				

<b>PURCHASE ORDER ITEMS SEPARATE FROM WORK RELEASE ITEMS</b>						
WO# SUB	TEI EST	TEI FINAL	REQ#	PO#	COMMENTS	
012	\$959	\$816	200144	04-37477-L4	AIR TESTING REMAINING 32 BURNERS	
018	\$740	\$816	200144	04-37477-L4	REPAIR TWO DAMAGED BURNER RODS	
019	\$11380	\$10274	200133	04-37477-L1	ESTIMATED 169 TUBE REPAIR WELDS	
	\$13079	\$11906				

WO# Subs 012 & 19 - Static pressure and total pressure ½' stainless steel tubing on the burners were air tested when received and found to leak. This Resulted in additional testing of all 48 burners. TEI ended up making 149 heli- arc tube welds to correct the 34 leaks that were found. Most of the burners were staged inside that U2 boiler so that the heli-arc welding rigs had to be dragged around from floor to floor and burner to burner. Sal was sent photos and email on this item while the work was going on.

WO# Sub 20 - The seal ring between the burner front plate and the windbox was sent out on the burners as a hoop. ring. The hoop ring was only 1/4" thick and would not gap the distance between the burner front plate and the windbox making welding impossible. ABT sent out an angle bent into a hoop that had a 2" leg to bridge the gap between the burner front plate and the windbox. All of the burners were staged in Unit 2 by the time the angle hoops came. The original plate hoops had to be removed from the burners and replaced with an angle hoop prior to burner

**IP7\_027782**

installation. Sal was sent photos and email on this item while the work was going on.

WO# Sub 21 - Burners were fabricated with a ½" to 3/4" gap between the outer sleeve of the OFA igniters and the ABT Scanners. The outer sleeves could not be welded into position without the use of 1/4 plate donuts that were used to bridge the gaps on all 48 burners in 144 places. Sal was sent photos and email on this item while the work was going on.

WO# Sub 31 - The horizontal fuel diffusers would not fit into the coal elbows without removing about 1/4" to 3/8" from the chrome plates that make up the leading edge of the fuel diffuser. This work required that a plasma torch be rented and used to trim the chrome plate. All 48 horizontal fuel diffusers had to be cut. Sal was sent photos and email on this item while the work was going on.

WO# Sub 18 - Two of the drive rods for the outer damper sleeve were damaged during shipping. TEI sent out new drive rods. Sal was sent photos and email on this item while the work was going on.

WO# Sub 22 - ABB directed IPSC to place locking bolts in the existing 3" schedule 40 pipe on the burner register plate. ABB then decided to go with full couplings see ABB drawing STNRD - D2322666-105. TEI had drilled all of the holes by this time. Bolts were placed in the tapped holes to plug them and to provide additional stability to scanner tube.



**WO 9396033-00**  
**INSTALL 48 LOW NOX BURNERS**  
**PO/CONTRACT 04-45618**  
**SPEC 45618**  
**ACCOUNT 00-2SBX-402**  
**BACK CHARGES TO ABT**

WO# SUB	TEI EST	TEI FINAL	1 <sup>st</sup> REQ	2 <sup>nd</sup> REQ	POA	COMMENTS
012	\$474	\$408	200214	200476	004	AIR TEST TUBING 1 <sup>ST</sup> 16 BURNERS
020	\$3232	\$3562	200214	200474	003	RMVE AND REPLACES ABT SEAL RINGS
021	\$5153	\$5602	200214	200520	006	DONUTS TO SEAL GAPS INGNTR/SCNNR
031	\$4232		201214	200101	013	MODIFY HFDs BACK CHARGE
	13091					

<b>PURCHASE ORDER ITEMS SEPARATE FROM WORK RELEASE ITEMS</b>					
018	\$740	\$816	200144	04-37477-L4	REPAIR TWO DAMAGED BURNER RODS
019	\$11380		200133	04-37477-L1	ESTIMATED 169 TUBE REPAIR WELDS
012	\$959	\$816	200162	04-37477-L3	AIR TEST TBNG 32 RMNING BURNERS
	13079				

**From:** Howard Hamilton  
**To:** Will Lovell  
**Date:** 12/20/2005 12:03:32 PM  
**Subject:** Weight of ABT Burner

The weight of an ABT Burner proper is 6000 lbs. This includes the register and the burner tube.

**CC:** Dean Wood; Garry Christensen

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/10/2004 9:23:06 AM  
**Subject:** RE: Questions and requests Concerning Vertical Fuel Distributor(VFD)

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Monday, January 26, 2004 2:11 PM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:See attached drawing.

2. What material is the VFD made of?

Response:Silicon Carbide Block with Carbon steel holder on outside.

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:see previous answer

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:This is installation contractors responsibility.

5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response:Enough ceramic material needs to be removed to fit the insert. We don't have detail dimensions of existing ceramic liners.

What is the size and shape of the ceramic to be placed back?

Response: 1" thick, standard 9" long ceramic tile with 6 degree angle bevel for self supporting key arch attachment.

Are there just two new pieces of ceramic that fit back into the piped segments and around the VFT?

Response: Pieces will need to be cut to fit depending on size tile liners removed. We will supply you with four 10" continuous rim diamond impregnated masonry blades for cutting the replacement ceramic tiles.

Are there a bunch of small pieces like floor tiles that need to be placed back?

Response: See response on size above.

Does the ceramic liner kit have an instruction sheet that you can email or fax?

Response: I will obtain instruction sheet and forward it to you.

Has ABT used these kits on past projects?

Response: Yes.

Does ABT know how many man-hours have been expended to install the kits we have been supplied?

Response: No, this has always been performed by a sub-supplier at a fixed price.

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as bedding and grout". Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response: I will obtain MSDS sheet and forward to you. Note that any RTV required should be supplied by the installation contractor.

What is the differentiation between grout and bedding?

Response: Bedding is set that the tile sits in. Grout is applied in tile seams. This application does not require grout.

CC: "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/11/2004 1:00:41 PM  
**Subject:** Fwd: RE: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Darrell: I'll bring over 3 copies of the attached drawing

Hugh: I's place a copy of the drawing on your desk.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/11/2004 11:02:25 AM >>>  
Howard,  
See my responses below.  
Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Tuesday, February 10, 2004 4:10 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: RE: Questions and requests Concerning Vertical FuelDistributor(VFD)

1. Is the holder made out of hi carbon or low carbon steel. This will have and effect on the welding procedure.  
Response: A36, medium carbon.

2. Drawing 3008-500-A00-0 was help. Could you send 3008-500-A01-0, 3008-500-A00-D01, 3008-500-A00-D02  
Response: These are shop fabrication details that we don't supply to customers. However attached is the -A01 drawing you asked for that gives the steel shell dimensions that should help you.

3. When we last talk back in mid January the VFD and HFD were scheduled to be on site 2/23/04. You were going to see if this schedule could be improved. What is that latest ETA for the VFD , HFD and related hardware.  
Response: Materials and fabrication is on going - kits, cement, VFD, HFD look to be on schedule for delivery on 2/23 but I don't expect they'll to be on site any sooner.

4. The ceramic block is note below as 1" thick and 9" long. How wide is it?  
Response: The tiles have a major width of 2.578" (this with is the back of the tile and sets against the ID of the coal elbow). The tiles have a side angle of 6 deg 26 minutes- this provides the key-arch.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/10/2004 9:18:15 AM  
>>>

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

IP7\_027788

Sent: Monday, January 26, 2004 2:11 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes: [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:See attached drawing.

2. What material is the VFD made of?

Response:Silicon Carbide Block with Carbon steel holder on outside.

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:see previous answer

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:This is installation contractors responsibility.

5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response:Enough ceramic material needs to be removed to fit the insert.  
We don't have detail dimensions of existing ceramic liners.

What is the size and shape of the ceramic to be placed back?

Response:1" thick, standard 9" long ceramic tile with 6 degree angle bevel for self supporting key arch attachment.

Are there just two new pieces of ceramic that fit back into the piped segments and around the VFT?

Response:Pieces will need to be cut to fit depending on size tile liners

removed. We will supply you with four 10" continuous rim diamond impregnated masonry blades for cutting the replacement ceramic tiles.

Are there a bunch of small pieces like floor tiles that need to be placed back?

Response: See response on size above.

Does the ceramic liner kit have an instruction sheet that you can email or fax?

Response: I will obtain instruction sheet and forward it to you.

Has ABT used these kits on past projects?

Response: Yes.

Does ABT know how many man-hours have been expended to install the kits we have been supplied?

Response: No, this has always been performed by a sub-supplier at a fixed price.

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as bedding and grout". Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response: I will obtain MSDS sheet and forward to you. Note that any RTV required should be supplied by the installation contractor.

What is the differentiation between grout and bedding?

Response: Bedding is set that the tile sits in. Grout is applied in tile seams. This application does not require grout.

CC: Hugh Loukinas

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/10/2004 12:24:09 PM  
**Subject:** RE: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Howard,  
Attached are the MSDS for the bedding cement components we will be supplying with the VFD installation kits. It's a 2 part mixture, liquid & powder.

Sal

-----Original Message-----

From: Salvatore Ferrara [mailto:sal@advancedburner.com]  
Sent: Tuesday, February 10, 2004 11:18 AM  
To: 'Howard Hamilton'  
Cc: 'James Nelson'; 'Phil Hailes'; 'ssteede@teiservices.com'  
Subject: RE: Questions and requests Concerning Vertical Fuel Distributor(VFD)

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Monday, January 26, 2004 2:11 PM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:See attached drawing.

2. What material is the VFD made of?

Response:Silicon Carbide Block with Carbon steel holder on outside.

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:see previous answer

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:This is installation contractors responsibility.

IP7\_027791



5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response: Enough ceramic material needs to be removed to fit the insert. We don't have detail dimensions of existing ceramic liners.

What is the size and shape of the ceramic to be placed back?

Response: 1" thick, standard 9" long ceramic tile with 6 degree angle bevel for self supporting key arch attachment.

Are there just two new pieces of ceramic that fit back into the piped segments and around the VFT?

Response: Pieces will need to be cut to fit depending on size tile liners removed. We will supply you with four 10" continuous rim diamond impregnated masonry blades for cutting the replacement ceramic tiles.

Are there a bunch of small pieces like floor tiles that need to be placed back?

Response: See response on size above.

Does the ceramic liner kit have an instruction sheet that you can email or fax?

Response: I will obtain instruction sheet and forward it to you.

Has ABT used these kits on past projects?

Response: Yes.

Does ABT know how many man-hours have been expended to install the kits we have been supplied?

Response: No, this has always been performed by a sub-supplier at a fixed price.

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as bedding and grout". Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response: I will obtain MSDS sheet and forward to you. Note that any RTV required should be supplied by the installation contractor.

What is the differentiation between grout and bedding?

Response: Bedding is set that the tile sits in. Grout is applied in tile

seams. This application does not require grout.

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**From:** Howard Hamilton  
**To:** Salvatore Ferrara  
**Date:** 2/10/2004 2:09:59 PM  
**Subject:** RE: Questions and requests Concerning Vertical Fuel Distributor(VFD)

1. Is the holder made out of hi carbon or low carbon steel. This will have an effect on the welding procedure.
2. Drawing 3008-500-A00-0 was help. Could you send 3008-500-A01-0, 3008-500-A00-D01, 3008-500-A00-D02
3. When we last talk back in mid January the VFD and HFD were scheduled to be on site 2/23/04. You were going to see if this schedule could be improved. What is that latest ETA for the VFD , HFD and related hardware.
4. The ceramic block is note below as 1" thick and 9" long. How wide is it?

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/10/2004 9:18:15 AM >>>

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Monday, January 26, 2004 2:11 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:See attached drawing.

2. What material is the VFD made of?

Response:Silicon Carbide Block with Carbon steel holder on outside.

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:see previous answer

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:This is installation contractors responsibility.

5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response: Enough ceramic material needs to be removed to fit the insert. We don't have detail dimensions of existing ceramic liners.

What is the size and shape of the ceramic to be placed back?

Response: 1" thick, standard 9" long ceramic tile with 6 degree angle bevel for self supporting key arch attachment.

Are there just two new pieces of ceramic that fit back into the piped segments and around the VFT?

Response: Pieces will need to be cut to fit depending on size tile liners removed. We will supply you with four 10" continuous rim diamond impregnated masonry blades for cutting the replacement ceramic tiles.

Are there a bunch of small pieces like floor tiles that need to be placed back?

Response: See response on size above.

Does the ceramic liner kit have an instruction sheet that you can email or fax?

Response: I will obtain instruction sheet and forward it to you.

Has ABT used these kits on past projects?

Response: Yes.

Does ABT know how many man-hours have been expended to install the kits we have been supplied?

Response: No, this has always been performed by a sub-supplier at a fixed price.

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as bedding and grout". Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response: I will obtain MSDS sheet and forward to you. Note that any RTV required should be supplied by the installation contractor.

What is the differentiation between grout and bedding?

Response: Bedding is set that the tile sits in. Grout is applied in tile

seams. This application does not require grout.

**CC:** James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/10/2004 8:26:00 AM  
**Subject:** Fwd: FW: Questions Concerning Item 10 on Drawing 03008-100-A02-D0

Darrell: The following is a summary of the ABT responses below:

1. ABT will be supplying rings rolled from L2"x2"x1/4" to replace the 1/4" plate hoop Item 10 on ABT drawing 03008-100-A02-D0. By this email and previous voice mail Sal Farrar of ABT is being ask for and eta for these hoops. When I have and ETA for the replacement hoops I will contact you.
2. The front plate of the burner is made out of A36 material. We now that the front plate, hoop and windbox are make out of A36. Thus P1 to P1 Welding procedures will be in effect for these welds.
3. ABT will not provide P numbers but they are required to provide the ASTM specification for the materials we are welding to. As a courtesy I thought they might provide suggested welding rod and preheats. At is it mild steel their input is not required.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/9/2004 11:06:01 AM >>>  
Howard,  
See our responses added below.  
Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
> Sent: Monday, January 26, 2004 6:23 PM  
> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
> Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
> Subject: Questions Concerning Item 10 on Drawing 03008-100-A02-D0

>  
> 1. B&W drawing 294359E calls for the hole in the windbox to  
accommodate  
> the burners to have a diameter of 78 1/4". ABT Drawing  
03008-100-A02-D0  
> calls out item 10 to be a carbon steel (A36) bar hoop 78 1/4" ID, 2  
3/4"  
> wide and 1/4" thick. This means that the only overlay onto the  
windbox  
> that ABT is depending on is the 1/4" thickness of the hoop (OD 78  
> 3/4").  
>  
> This appears to be a very close shave considering if the burner has to  
> be moved up down or side ways more than 1/4" the hoop and the hole  
will  
> have a gap that will need to be addressed.  
>  
> My Question is what happens if a sizable gap (say 1/2") is unavoidable  
> between hoop and windbox?  
>  
> Response: You are correct. We will supply rings rolled from 2 x 2 x

IP7\_027797

1/4"

angles to replace the hoop.

>

> 2. In Detail C on Drawing 03008-100-A02-D0 ABT has shown that a 3/16"

> fillet seal weld is required between Item 10 and the windbox. Since both

> material are A36 we can figure a required welding procedure.

>

> In Detail C on Drawing 03008-100-A02-D0 ABT has shown a 3/16" fillet

> seal weld between item 10 and the ABT burner front plate. The drawing

> calls out item 10 to be A36, but the front plate is not addressed.

>

> What is the front plate made out of?

>

> Response: A36

>

> What is the P-number and ASME designation for the burner front plate.

>

> Response: ABT does not use pressure part specifications for

> non-pressure parts. All of our welds are carbon steel to carbon steel unless noted otherwise.

>

>

> What welding rod does ABT recommend and is preheat or post heat

> required?

> Response: Welding procedures are to be provided by the welding

> contractor, not the equipment supplier.

**CC:** James Nelson; Phil Hailes; sal@advancedburner.com

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/10/2004 3:43:26 PM  
**Subject:** Fwd: FW: Questions concerning item 11 on drawing 03008-100-A02-D0

Darrell:

My summary of ABT's response below is as follows:

1. The burner throat ring provided by ABT is to weld directly to the casing ring on the boiler wall panels.
2. To accomplish the weld in item 1 the stainless steel B&W throat sleeve will need to be removed.
3. the weld is P1 to P1 to attach the ABT throat ring to the boiler wall panel casing ring.
4. There is to be no packing applied to the burner throat ring.
5. The burner is not to be welded to the burner throat ring so that it can freely move on this ring.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/9/2004 11:09:38 AM >>>

Howard,

See our answers below.

Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

> Sent: Tuesday, January 27, 2004 1:09 PM

> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

> Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

> Subject: Questions concerning item 11 on drawing 03008-100-A02-D0

>

> 1. Item 11 on drawing 03008-100-A02-D0 is made out of A36 steel. This  
> same casing ring on B&W's existing burner is made out of stainless  
steel

> TP 304.

>

> Why can ABT use mild steel ?

>

> Response. We have used C.S. in all of our instalations and have no  
reported  
problems.

>

> 2. Attached photo shows that there is a sizeable gap between Item 11  
> and the burner throat. B&W placed Kaowool rope packing to seal this  
gap

> in the existing burners.

>

> Does ABT require that this gap be sealed and if not, why and if so  
with  
> what?

>

**IP7\_027799**



> Response: Please remember this is not a replacement in kind. Our burner is different from the OEM in many ways, both in improved performance and durability. The gap is deliberate and supplies a stream of air that will keep the throat cool during out of service conditions.>

> 3. Item 11 is called out as "shipped with unit" in its description on drawing 03008-100-A02-D0. This would indicate that it is shipped loose

> or only tack welded to the burner as item 10 is called out to be in removal and installation note 8.

>

> Is Item 11 unattached to the burner throat during operation allowing the burner to expand and contract without restriction?

>

> Response:

>

> Is Item 11 welded to the burner throat or just tack welded?

>

> Response:

>

> If Item 11 is only tack welded to the burner throat do these tacks need

> to be broken to allow burner movement?

>

> Response:

>

> 4. Item 11 is not called out in the Removal and Installation Notes.

>

> Does ABT have a recommended sequence for the welding of Item 11.

>

> Response: Item 11 is tacked to the burner throat for shipment. the tacks should be cut before installation of the burner, to allow free motion between the burner and the throat.

A note will be added to the drawing specifying this, as well as the welding of the ring to the existing wallbox.

>

> 5. In B&W drawing 294359E the throat sleeve casing (Item e) is shown welded to the casing weld ring which is welded to the boiler wall tubes.

>

> Is item 11 welded to the throat sleeve casing (Item e) or the casing weld ring?

>

> Response:> Does ABT require that the throat sleeve casing (Item e) be cut flush

> with the casing weld ring so that item 11 can be welded to the casing  
> weld ring?  
>  
> Response: The casing ring (B&W item E), should be removed so that our  
ring  
can weld to the casing weld ring.  
We will add this to the installation notes.  
>  
>  
>

**CC:**           Hugh Loukinas

**From:** Howard Hamilton  
**To:** [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Date:** 2/10/2004 4:08:53 PM  
**Subject:** Fwd: FW: Questions Concerning Removal and Installation Note 16

Darrell: FYI

>>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/9/2004 11:13:50 AM >>>>  
Howard,  
See our answers added below. Some of these questions were asked previously and answered in which case I skipped on the responses to those.  
Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

> Sent: Wednesday, January 28, 2004 1:42 PM

> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

> Cc: Jerry Finlinson; James Nelson; Phil Hailes;

[ssteede@teiservices.com](mailto:ssteede@teiservices.com)

> Subject: Questions Concerning Removal and Installation Note 16

>

> Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary,  
> reposition the burner to fit up with the fuel line?"

>

> 1. Removal and installation note 10 calls for the distance from  
> centerline of furnace wall to end of fuel distributor tip to be  
> 18-5/8". Should the burner have to be moved in or out along its  
> longitudinal axis this dimension will have to be changed.

>

> How far can we reduce this dimension by moving the burner toward the  
> boiler?

>

> Response:

>

> How far can we increase this dimension by moving the burner away from  
> the boiler?

>

> Response:

>

> 2. The ring support ( item number 10) has not been welded out to the  
> windbox prior to note 16 (see note 17) but has been welded out to the  
> burner front plate see note 12 and 13. This will prevent the burner  
from  
> being moved in toward the boiler. It would appear that ABT does not  
want

> to reduce the 18-5/8" dimension noted above.

>

> Should fit up require that the burner be moved toward the boiler how  
is

> this to be accomplished?

>

> Response:

>  
> 3 Note 17 on ABT Drawing 03008-100-A02-D0 states, "Finish welding  
> burner front and support ring". This is a repeat of the weld called  
out  
> in note 13 which states, "Finish welding burner front plate in place".  
>  
> Should this note read, "Finish welding burner support ring to boiler  
> windbox"?  
>  
> Response:  
>  
> Did ABT intend to weld the burner support ring to the boiler wind box  
> in note 13 and the burner front plate to the burner support ring in  
note  
> 17?  
>  
> If this is the case the burner would not be prevented from being moved  
> in toward the boiler by the burner support ring.  
>  
> Response. The welding sequence will be rewritten to call for tack welds  
prior to installation of the elbow.  
completing the welding will be one of the last items.

>  
> 4. If item 11 is welded to the burner throat the burner cannot be  
moved  
> toward the boiler for any adjustments.  
>  
> Should fit up require that the burner be moved toward the boiler how  
is  
> this to be accomplished?  
>  
> Response: Rigging is by the installation contractor, not by ABT.

>  
> 5. The welding of item 11 to the boiler casing (3/16" fillet 1" on  
18")  
> is not called out in the removal and installation notes.  
>  
> When does TEI recommend that this weld be made?  
>  
> Response. These items were asked in a previous e-mail. See it for a  
response.

>  
> 6. Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary,  
> reposition the burner to fit up with the fuel line?"  
>  
> I have addressed concerns for moving the burner to or away from the

> boiler above.  
 >  
 > Concerns about moving the burner up and down and side to side are  
 > addressee here.  
 >  
 > If the burner has to be moved up or down or side to side this will  
 > change the centering of the burner called out in note 10 which states  
 > "Center burner in wall opening and level and plumb burner."  
 >  
 > What field reference does ABT expect to be used to determine if the  
 > burner is centered to the wall opening?  
 >  
 > Response: An equal space between the tubes forming the opening and  
 the  
 outside of the throat.

>  
 > How far off from this field reference can we be if we have to move the  
 > burner to make the fuel connection.  
 >  
 > Note 10 requires the burner to be level and plumb?  
 >  
 > If adjustment have to be made to make up to the fuel line, will the  
 > burner have to remain level and plumb or can it be tilted a little to  
 > accomplish this fit up?  
 >  
 > Response. If everything was built to print, and not distorted during  
 operation, the ability to move the burner would not be required.  
 We added this so that the fit between the burner and the existing  
 coal pipe  
 could be accomplished with a minimum of field effort.  
 I apologize for the inconsistent sequence of welding, but the intent  
 should  
 have been quite clear. The burner can be shifted to some degree to  
 accommodate the existing pipe location.

If conditions are close to the drawing information provided to us, this  
 discussion is moot. If they are not then we will address the problems  
 when  
 we have been provided enough information to make a decision.

>  
 > If it can be tilted by how much and what is the point of reference?  
 >  
 > Response.  
 >  
 > Any of the welds called out for item 11 and the welds called out for  
 > item 10 as shown in Detail C will not allow up, down or side to side  
 > adjustments to be made if required to make the fuel connection.  
 >  
 > It would appear that only tack welds should be made until after the  
 > burner has been made up to the fuel connection.  
 >

- > Would ABT have a problem of only making tack welds until after the fuel
- > connection has been made?
- >
- > Response.
- >
- > The removal and installation note 21 states "Make all oil and steam
- > connections."
- >
- > This should read "Make all oil and air connections."
- >
- > Response: We will correct this. the information supplied was not clear
- on
- the atmozing fluid.
- >
- >

**CC:** Hugh Loukinas

**From:** Howard Hamilton  
**To:** [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Date:** 2/11/2004 1:11:52 PM  
**Subject:** Fwd: FW: Questions Concerning The Horizontal Fuel Distributor (HFD)

Darrell: FYI

Hugh: Give to Isely

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/9/2004 4:03:35 PM >>>  
Howard,  
See our answers below.  
Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
> Sent: Monday, January 26, 2004 5:37 PM  
> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
> Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
> Subject: Questions Concerning The Horizontal Fuel Distributor (HFD)

>  
> Reference Drawing 03008-500-A02-D0 entitled, "Horizontal Fuel  
> Distributor Assembly."

>  
> 1. Drawing 03008-500-A02-D0 appears to show that the HFD simply fits  
> inside the coal elbow.

>  
> Will alterations need to be made to the ceramic in the coal elbow to  
> accommodate the HFD or has enough tolerance been allowed to avoid  
having  
> to alter the existing ceramic in the coal elbow?

>  
> Response:No

>  
> 2. Items 2 and 3 in drawing 03008-500-A02-D0 are called out to be made  
> of Alumina.

>  
> What is Alumina is it a ceramic or some type of metal?

>  
> Response:Alumina is a ceramic.

>  
> 3. Is Alumina fragile and will special precautions need to be taken  
to  
> keep from chipping or breaching it?

>  
> Response: Handle it carefully. It is not as fragile as glass, but any  
sharp  
impact can damage it.

>

> 4. Should the Alumina of any of the 48 HFD's be chipped, cracked or  
> broken can they be repaired in the field.

>

> Response: If this happens contact us with specifics.

>

> 5. What type of repair will need to be made to restore a piece of  
> alumna that been chipped, cracked or broken?

>

> Response:See above

>

> 6. Will the bolts, nuts, washers and gaskets called out in drawing  
> 03008-100-A02-D0 be sent with the HFD or sent out separately?

>

> Response:Any item, not noted as "by other" or reuse is supplied by  
ABT.

>

> 7. If the items listed in "6" are sent separately how will they be  
> shipped, when will they be shipped and to whom are they being shipped.

>

> Response:They will be shipped from PCW and package identified per the  
drawing.

>

>

>

**CC:** Hugh Loukinas



**From:** Howard Hamilton  
**To:** [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Date:** 2/10/2004 12:36:40 PM  
**Subject:** Fwd: RE: Rolled Hoop Replacement

Darrell:

Develop an extra for this work and I will get it started so you are issue a POA.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/10/2004 12:14:45 PM >>>

Howard,

We are supplying L2"x3"x1/4" rolled angles so you will be gaining 1/4" of adjustment. You won't need the new angles until you are installing the burners however you can cut the tacks on the rolled hoop Item 10 in the meantime and discard it. The new rolled angles will be shipping with the last truck load (maybe some partials earlier).

We are revising the installation notes on the field assembly drawing to account for this change. Attached is a WORD file with the revised notes as they will appear on the drawing.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Tuesday, February 10, 2004 10:50 AM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: Rolled Hoop Replacement

ABT is proposing to replace the rolled hoop item 10 on ABT drawing 03008-100-A02-D2 with a rolled L2"x2"x1/4. The existing hoop is 2 3/4" wide 1/4" rolled plate. This would mean that we will be losing 3/4" of adjustment in the horizontal direction. Would it not be better to roll

.

Please advise.

IP7\_027808

## REMOVAL AND INSTALLATION NOTES

THE FOLLOWING INSTRUCTIONS ARE SUGGESTIONS. THE SEQUENCE MAY BE MODIFIED TO ACCOMMODATE WORK FLOW, EQUIPMENT AVAILABLE, AND SKILL LEVELS OF THE WORKMEN

UNLESS NOTED OTHERWISE ALL WELDS ARE CARBON STEEL TO CARBON STEEL.

1. REMOVE ELBOW
2. INSTALL VFD ITEM 3 (VERTICAL FUEL DISTRIBUTOR) PER DRAWING 03008-500-A03-0 IN EXISTING ELBOW
3. DISCONNECT SEAL AIR PIPING, OIL, AIR LINES AND ALL ELECTRICAL LEADS
4. REMOVE EXISTING SCANNERS, DISCARD.
5. REMOVE EXISTING OIL IGNITER AND SET ASIDE FOR REUSE
6. REMOVE INSULATION AND LAGGING AROUND EXISTING BURNER FRONT PLATE
7. REMOVE EXISTING BURNER AND DISCARD
8. REFERENCE B&W DRAWING 294359E. REMOVE ITEM e AND GRIND WELDS FLUSH TO THE EXISTING CASING WELD RING.
9. BREAK TACK WELDS OF SUPPORT RING, ITEM 10 AND SEAL RING ITEM 11
10. DISCARD ITEM 10 (ROLLED RING) AND REPLACE WITH NEW ANGLE RING SHIPPED SEPERATLY.
11. INSTALL NEW BURNER. SEE DRAWING 03008-100-A01-FW AND 03008-100-A01-RW FOR BURNER LOCATION AND SPIN. ITEM 11 SHOULD BE KEPT IN POSITION ON THE TIP.
12. CENTER BURNER IN FURNACE WALL OPENING AND LEVEL AND PLUMB BURNER. LOCATE TIP PER SIDE VIEW.
13. INSTALL BURNER CROSSOVER SUPPORT ITEM 9 (03008-100-A03-D07) AND SUPPORT END GUIDE ITEM 15 (03008-100-A03-D08), CENTER ITEM 15 ON ITEM 9 TUBING, WELD AS SHOWN IN SECTION D-D. SHIM TO FIT TO EXISTING SUPPORT RAILS. COMPLETE WELDING PER SECTION D-D.
14. LOCATE SUPPORT RING, ITEM 10, AGAINST WINDBOX WALL. TACK WELD TO WINDBOX AND BURNER FRONT PLATE
15. CENTER ITEM 11 ON THE TIP, AND TACK IN PLACE TO THE EXISTING CASING WELD RING
15. INSTALL COAL ELBOW & HORIZONTAL FUEL DISTRIBUTOR ASSEMBLY PER DETAIL B.
16. THE BURNER CAN BE MOVED UP TO 1/4" IN ANY DIRECTION TO FIT UP WITH THE EXISTING COAL PIPE ATTACHMENT.
17. FINISH WELDING FRONT PLATE AND SUPPORT RING IN PLACE SEE DETAIL "C".
18. FINISH WELDING BURNER FRONT AND SUPPORT RING PER DETAIL C
19. INSTALL FLAME SCANNER PER ABB DRAWING:  
902-2491-AA  
STNRD-B232666-107  
STNRD-D232665-025

STNRD-D232677-002

STNRD-00-D623232-000-001

20. INSTALL OIL IGNITER PER THIS DRAWING AND B&W DRAWING  
294359E
21. INSTALL T/C LEADS PER MANUFACTURERS INSTRUCTIONS.
22. MAKE ALL OIL AND AIR CONNECTIONS.
23. MAKE ALL ELECTRICAL CONNECTIONS FOR THERMOCOUPLES.  
AND MAIN FLAME SCANNER.
24. INSULATE AND LAG BURNER FRONT
25. STROKE ALL OPERATORS TO MAKE SURE THAT THEY FULLY OPEN AND  
CLOSE WITH NO BINDING.
- 26 AFTER DRAFT FANS HAVE BEEN STARTED CAREFULLY TIGHTEN  
ALL PACKING GLANDS TO STOP ANY LEAKS AROUND SHAFTS  
(DO NOT OVER TIGHTEN). RECHECK ALL OPERATORS  
FOR MOVEMENT.

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 2/10/2004 8:50:01 AM  
**Subject:** Rolled Hoop Replacement

ABT is proposing to replace the rolled hoop item 10 on ABT drawing 03008-100-A02-D2 with a rolled L2"x2"x1/4". The existing hoop is 2 3/4" wide 1/4" rolled plate. This would mean that we will be losing 3/4" of adjustment in the horizontal direction. Would it not be better to roll an L2"x3"x1/4".

Please advise.

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/10/2004 9:21:04 AM  
**Subject:** Fwd: FW: Questions and requests Concerning the removal and installation of the existing B&W Oil Igniter

Darrell:

This is a summary of the responses below:

1. ABT is referencing B&W drawing 294359E for burner and lighter dimensions not 29435E.
2. The weld between the lighter shroud and the burner front plate is P1 to P1 something we did not know previously.
3. The front of the CFA lighter shield is to be set back 5-1/4" from the centerline of the boiler which is the dimension called out on B&W 294359E.
4. The angle and dimension with respect to the burner centerline for the CFA Lighter are to be set by the holes provided in the ABT burner. It would appear there are no dimensional checks for the CFA lighter other than locating the tip of the lighter as called out above. Simply center the CFA lighter in the ABT Bunnerr hole cut for it and all will work out.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/9/2004 11:16:38 AM >>>

Howard,

See our responses added below.

Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

> Sent: Monday, January 26, 2004 4:24 PM

> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

> Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

> Subject: Questions and requests Concerning the removal and  
> installation of the existing B&W Oil Igniter

>

> Reference Drawing 03008-100-A02-D0 entitled, "Field Assembly":

>

> 1. Removal and installation note on drawing 03008-100-A02-D0 states,

> "Install Oil Lighter per this drawing and B&W Drawing 29435E."

>

> I have been able to locate B&W Drawing 294359E that is a sectional  
> assembly drawing for the existing Mark V B&W Burners.

>

> I assume that ABT meant to reference drawing 294359 in note 19, is  
this

> correct?

>

> Response:

> We meant to reference B&W Drawing 294359E.

IP7\_027812

> 2. Section A-A on Drawing 03008-100-A02-D0 calls out a 3/16" fillet  
> seal weld for attaching the old B&W igniter to the new ABT Burner

Front

> Plate.

>

> What is the front plate of the new ABT Burner made out of?

>

> Response: A36 carbon Steel

>

> What is the P number and ASME material designation for the ABT front  
> plate?

>

> Response: ABT does not use pressure part specifications for  
non-pressure  
parts. All of our welds are carbon steel to carbon steel unless noted  
otherwise.

>

> The lighter sleeve that is shown welded to the ABT front plate is made  
> of carbon steel.

>

> What type of welding rod is required and is preheat or post heat  
needed

> for this weld?

>

> Response: Welding procedures are to be provided by the welding  
contractor,  
not the equipment supplier.

>

> 2. B&W drawing 294359E calls for the CFA lighter to be horizontal  
where

> ABT Drawing 03008-100-A02-D0 calls for the CFA lighter to be at an  
> angle.

>

> What is the horizontal angle of the B&W CFA lighter in the new ABT  
> Burner?

>

> Response: This is not a replacement in kind burner. The igniter is to  
be  
installed in the indicated position on the burner. The burner components  
are  
designed to set the proper angle of the igniter.

>

> 3. B&W drawing 294359E calls for the face of the CFA lighter shield to

> be located back from the centerline of the boiler wall 5 1/4". ABT  
> Drawing 03008-100-A02-D0 does not call out this end limiting  
> dimension.  
>  
> Where does ABT want to locate the face of the CFA lighter shield with  
> respect to the centerline of the boiler wall?  
>  
> Response: Use the B&W dimension.

>  
> 4. B&W drawing 294359E calls for a distance from the centerline of the  
> burner to the centerline of the lighter to be 16-15/16" at both the  
> front and rear ends of the lighter, which also tells one that the  
> lighter is horizontal. ABT Drawing 03008-100-A02-D0 does not call out  
> a  
> distance from centerline dimension for either the front or rear of the  
> lighter.  
>  
> What dimension from centerline does ABT want to locate the CFA lighter  
> both front and rear end of same?  
>  
> Response: See above.

>  
> 5. Does ABT require any field alteration to the burners, such as  
> trimming vanes?  
>  
> Response: No.  
>  
>  
>  
>

**CC:** James Nelson; Phil Hailes; sal@advancedburner.com\

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 1/28/2004 11:42:21 AM  
**Subject:** Questions Concerning Removal and Installation Note 16

Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary, reposition the burner to fit up with the fuel line?"

1. Removal and installation note 10 calls for the distance from centerline of furnace wall to end of fuel distributor tip to be 18-5/8". Should the burner have to be moved in or out along its longitudinal axis this dimension will have to be changed.

How far can we reduce this dimension by moving the burner toward the boiler?

Response:

How far can we increase this dimension by moving the burner away from the boiler?

Response:

2. The ring support ( item number 10) has not been welded out to the windbox prior to note 16 (see note 17) but has been welded out to the burner front plate see note 12 and 13. This will prevent the burner from being moved in toward the boiler. It would appear that ABT does not want to reduce the 18-5/8" dimension noted above.

Should fit up require that the burner be moved toward the boiler how is this to be accomplished?

Response:

3. Note 17 on ABT Drawing 03008-100-A02-D0 states, "Finish welding burner front and support ring". This is a repeat of the weld called out in note 13 which states, "Finish welding burner front plate in place".

Should this note read, "Finish welding burner support ring to boiler windbox"?

Response:

Did ABT intend to weld the burner support ring to the boiler wind box in note 13 and the burner front plate to the burner support ring in note 17?

If this is the case the burner would not be prevented from being moved in toward the boiler by the burner support ring.

Response.

4. If item 11 is welded to the burner throat the burner cannot be moved toward the boiler for any adjustments.

Should fit up require that the burner be moved toward the boiler how is this to be accomplished?

Response:



5. The welding of item 11 to the boiler casing (3/16" fillet 1" on 18") is not called out in the removal and installation notes.

When does TEI recommend that this weld be made?

Response.

6. Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary, reposition the burner to fit up with the fuel line?"

I have addressed concerns for moving the burner to or away from the boiler above.

Concerns about moving the burner up and down and side to side are addressed here.

If the burner has to be moved up or down or side to side this will change the centering of the burner called out in note 10 which states "Center burner in wall opening and level and plumb burner."

What field reference does ABT expect to be used to determine if the burner is centered to the wall opening?

Response:

How far off from this field reference can we be if we have to move the burner to make the fuel connection.

Note 10 requires the burner to be level and plumb?

If adjustment have to be made to make up to the fuel line, will the burner have to remain level and plumb or can it be tilted a little to accomplish this fit up?

Response.

If it can be tilted by how much and what is the point of reference?

Response.

Any of the welds called out for item 11 and the welds called out for item 10 as shown in Detail C will not allow up, down or side to side adjustments to be made if required to make the fuel connection.

It would appear that only tack welds should be made until after the burner has been made up to the fuel connection.

Would ABT have a problem of only making tack welds until after the fuel connection has been made?

Response.

The removal and installation note 21 states "Make all oil and steam connections."

This should read "Make all oil and air connections."

Response:

**CC:** James Nelson; Jerry Finlinson; Phil Hailes; ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 1/26/2004 3:37:02 PM  
**Subject:** Questions Concerning The Horizontal Fuel Distributor (HFD)

Reference Drawing 03008-500-A02-D0 entitled, "Horizontal Fuel Distributor Assembly."

1. Drawing 03008-500-A02-D0 appears to show that the HFD simply fits inside the coal elbow.

Will alterations need to be made to the ceramic in the coal elbow to accommodate the HFD or has enough tolerance been allowed to avoid having to alter the existing ceramic in the coal elbow?

Response:

2. Items 2 and 3 in drawing 03008-500-A02-D0 are called out to be made of Alumina.

What is Alumina is it a ceramic or some type of metal?

Response:

3. Is Alumina fragile and will special precautions need to be taken to keep from chipping or breaching it?

Response:

4. Should the Alumina of any of the 48 HFD's be chipped, cracked or broken can they be repaired in the field.

Response:

5. What type of repair will need to be made to restore a piece of alumina that been chipped, cracked or broken?

Response:

6. Will the bolts, nuts, washers and gaskets called out in drawing 03008-100-A02-D0 be sent with the HFD or sent out separately?

Response:

7. If the items listed in "6" are sent separately how will they be shipped, when will they be shipped and to whom are they being shipped.

Response:

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com

**IP7\_027818**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/9/2004 1:19.39 PM  
**Subject:** FW: Questions Concerning Removal and Installation Note 16

Howard,

On Burner insertion we can accept 1/4" in or out without a problem.

Beyond that each case will have to be reviewed by ABT.

Sal

> -----Original Message-----

> From: Howard Hamilton [mailto:howard-h@ipsc.com]

> Sent: Wednesday, January 28, 2004 1:42 PM

> To: sal@advancedburner.com

> Cc: Jerry Finlinson; James Nelson; Phil Hailes;

ssteede@teiservices.com

> Subject: Questions Concerning Removal and Installation Note 16

>

> Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary,

> reposition the burner to fit up with the fuel line?

>

> 1. Removal and installation note 10 calls for the distance from

> centerline of furnace wall to end of fuel distributor tip to be

> 18-5/8". Should the burner have to be moved in or out along its

> longitudinal axis this dimension will have to be changed.

>

> How far can we reduce this dimension by moving the burner toward the

> boiler?

>

> Response:

>

> How far can we increase this dimension by moving the burner away from

> the boiler?

>

> Response:

>

> 2. The ring support ( item number 10) has not been welded out to the

> windbox prior to note 16 (see note 17) but has been welded out to the

> burner front plate see note 12 and 13. This will prevent the burner

from

> being moved in toward the boiler. It would appear that ABT does not

want

> to reduce the 18-5/8" dimension noted above.

>

> Should fit up require that the burner be moved toward the boiler how

is

> this to be accomplished?

>

> Response:

>

> 3. Note 17 on ABT Drawing 03008-100-A02-D0 states, "Finish welding

> burner front and support ring". This is a repeat of the weld called

out

> in note 13 which states, "Finish welding burner front plate in place".

>

> Should this note read, "Finish welding burner support ring to boiler windbox"?

>

> Response:

>

> Did ABT intend to weld the burner support ring to the boiler wind box in note 13 and the burner front plate to the burner support ring in note 17?

>

> If this is the case the burner would not be prevented from being moved in toward the boiler by the burner support ring.

>

> Response.

>

> 4. If item 11 is welded to the burner throat the burner cannot be moved toward the boiler for any adjustments.

>

> Should fit up require that the burner be moved toward the boiler how is this to be accomplished?

>

> Response:

>

> 5. The welding of item 11 to the boiler casing (3/16" fillet 1" on 18") is not called out in the removal and installation notes.

>

> When does TEI recommend that this weld be made?

>

> Response.

>

> 6. Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary, reposition the burner to fit up with the fuel line?"

>

> I have addressed concerns for moving the burner to or away from the boiler above.

>

> Concerns about moving the burner up and down and side to side are addressee here.

>

> If the burner has to be moved up or down or side to side this will change the centering of the burner called out in note 10 which states "Center burner in wall opening and level and plumb burner.

>

> What field reference does ABT expect to be used to determine if the burner is centered to the wall opening?

>

> Response:

>

> How far off from this field reference can we be if we have to move the burner to make the fuel connection.

>  
 > Note 10 requires the burner to be level and plumb?  
 >  
 > If adjustment have to be made to make up to the fuel line, will the  
 > burner have to remain level and plumb or can is be tilted a little to  
 > accomplish this fit up?  
 >  
 > Response.  
 >  
 > If it can be tilted by how much and what is the point of reference?  
 >  
 > Response.  
 >  
 > Any of the welds called out for item 11 and the welds called out for  
 > item 10 as shown in Detail C will not allow up, down or side to side  
 > adjustments to be made if required to make the fuel connection.  
 >  
 > It would appear that only tack welds should be made until after the  
 > burner has been make up to the fuel connection.  
 >  
 > Would ABT have a problem of only making tack welds until after the  
 fuel  
 > connection has been made?  
 >  
 > Response.  
 >  
 > The removal and installation note 21 states "Make all oil and steam  
 > connections."  
 >  
 > This should read "Make all oil and air connections."  
 >  
 > Response:  
 >  
 >

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 1/26/2004 2:24:10 PM  
**Subject:** Questions and requests Concerning the removal and installation of the existing B&W Oil Igniter

Reference Drawing 03008-100-A02-D0 entitled, "Field Assembly":

1. Removal and installation note on drawing 03008-100-A02-D0 states, "Install Oil Lighter per this drawing and B&W Drawing 29435E."

I have been able to locate B&W Drawing 294359E that is a sectional assembly drawing for the existing Mark V B&W Burners.

I assume that ABT meant to reference drawing 294359 in note 19, is this correct?

Response:

2. Section A-A on Drawing 03008-100-A02-D0 calls out a 3/16" fillet seal weld for attaching the old B&W igniter to the new ABT Burner Front Plate.

What is the front plate of the new ABT Burner made out of?

Response:

What is the P number and ASME material designation for the ABT front plate?

Response:

The lighter sleeve that is shown welded to the ABT front plate is made of carbon steel.

What type of welding rod is required and is preheat or post heat needed for this weld?

Response:

2. B&W drawing 294359E calls for the CFA lighter to be horizontal where ABT Drawing 03008-100-A02-D0 calls for the CFA lighter to be at an angle.

What is the horizontal angle of the B&W CFA lighter in the new ABT Burner?

Response:

3. B&W drawing 294359E calls for the face of the CFA lighter shield to be located back from the centerline of the boiler wall 5 1/4". ABT Drawing 03008-100-A02-D0 does not call out this end limiting dimension.

Where does ABT want to locate the face of the CFA lighter shield with respect to the centerline of the boiler wall?

Response:

4. B&W drawing 294359E calls for a distance from the centerline of the burner to the centerline of the lighter to be 16-15/16" at both the front and rear ends of the lighter, which also tells one

that the lighter is horizontal. ABT Drawing 03008-100-A02-D0 does not call out a distance from centerline dimension for either the front or rear of the lighter.

What dimension from centerline does ABT want to locate the CFA lighter both front and rear end of same?

Response:

5. Does ABT require any field alteration to the burners, such as trimming vanes?

Response:

**CC:** James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)



**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 1/26/2004 12:10:35 PM  
**Subject:** Questions and requests Concerning Vertical Fuel Distributor (VFD)

Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:

2. What material is the VFD made of?

Response:

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:

5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response:

What is the size and shape of the ceramic to be placed back?

Response:

Are there just two new pieces of ceramic that fit back into the piped segments and around the VFT?

Response:

Are there a bunch of small pieces like floor tiles that need to be placed back?

Response:

Does the ceramic liner kit have an instruction sheet that you can email or fax?

Response:

Has ABT used these kits on past projects?

Response:

Does ABT know how many man-hours have been expended to install the kits we have been supplied?

Response:

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as bedding and grout".  
Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response:

What is the differentiation between grout and bedding?

Response:

**CC:** James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 1/26/2004 4:23:18 PM  
**Subject:** Questions Concerning Item 10 on Drawing 03008-100-A02-D0

1. B&W drawing 294359E calls for the hole in the windbox to accommodate the burners to have a diameter of 78 1/4". ABT Drawing 03008-100-A02-D0 calls out item 10 to be a carbon steel (A36) bar hoop 78 1/4" ID, 2 3/4" wide and 1/4" thick. This means that the only overlay onto the windbox that ABT is depending on is the 1/4" thickness of the hoop (OD 78 3/4").

This appears to be a very close shave considering if the burner has to be moved up down or side ways more than 1/4" the hoop and the hole will have a gap that will need to be addressed.

My Question is what happens if a sizable gap (say 1/2") is unavoidable between hoop and windbox?

Response:

2. In Detail C on Drawing 03008-100-A02-D0 ABT has shown that a 3/16" fillet seal weld is required between Item 10 and the windbox. Since both material are A36 we can figure a required welding procedure.

In Detail C on Drawing 03008-100-A02-D0 ABT has shown a 3/16" fillet seal weld between item 10 and the ABT burner front plate. The drawing calls out item 10 to be A36, but the front plate is not addressed.

What is the front plate made out of?

Response:

What is the P-number and ASME designation for the burner front plate.

Response:

Response:

What welding rod does ABT recommend and is preheat or post heat required?

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 1/27/2004 11:09:04 AM  
**Subject:** Questions concerning item 11 on drawing 03008-100-A02-D0

1. Item 11 on drawing 03008-100-A02-D0 is made out of A36 steel. This same casing ring on B&W's existing burner is made out of stainless steel TP 304.

Why can ABT use mild steel ?

Response.

2. Attached photo shows that there is a sizeable gap between Item 11 and the burner throat. B&W placed Kaowool rope packing to seal this gap in the existing burners.

Does ABT require that this gap be sealed and if not, why and if so with what?

Response:

3. Item 11 is called out as "shipped with unit" in its description on drawing 03008-100-A02-D0. This would indicate that it is shipped loosed or only tack welded to the burner as item 10 is called out to be in removal and installation note 8.

Is Item 11 unattached to the burner throat during operation allowing the burner to expand and contract without restriction?

Response:

Is Item 11 welded to the burner throat or just tack welded?

Response:

If Item 11 is only tack welded to the burner throat do these tacks need to be broken to allow burner movement?

Response:

4. Item 11 is not called out in the Removal and Installation Notes.

Does ABT have a recommended sequence for the welding of Item 11.

Response:

5. In B&W drawing 294359E the throat sleeve casing (Item e) is shown welded to the casing weld ring which is welded to the boiler wall tubes.

Is item 11 welded to the throat sleeve casing (Item e) or the casing weld ring?

Response:

Does ABT require that the throat sleeve casing (Item e) be cut flush with the casing weld ring so that item 11 can be welded to the casing weld ring?

Response:

**CC:** James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 1/21/2004 12:20:38 PM  
**Subject:** Erection Arrangement Drawings

Received the following drawings by email yesterday afternoon:

03008-100-A01-FW  
03008-100-A01-RW  
03008-100-A00-D0  
03008-100-A02-D0  
03008-500-A02-D0  
03008-500-A03-D0

I tried printing the 4 e-drawings (the one that end in DO). Our plotter is old and a review of what was on the computer with what was on the print show some discrepancies.

Please send 6 copies of the above drawings by snail mail so that we do not have to worry that something was omitted or altered by out plotter.

The drawings need to be "D" size (22"x34").

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** Tarkel Larson  
**Date:** 2/12/2004 1:52:29 PM  
**Subject:** Request of Services

Request that you be on site Thursday morning, February 26th, 2004.

TEI is looking to start installing ABT Burners on Tuesday, March 2.

TEI will be working 24 hours a day 7 days a week, two 12 hour shifts 6:30 AM to 6:30 PM, beginning Friday night, February 27th.

Insurance: I checked with Jan Finlinson our risk manager and was advised that ABT is good on their insurance until the middle of April.

Note: You may want to look at extending this coverage.

Drug Policy: Because you are a Service Representative by yourself and not using tools IPSC is willing to wave on ABT having a drug policy.

Safety Orientation: When you arrive on Thursday morning, February 26th you will be taken to our Safety Department. You will be given IPSC's General Safety Review, confined space class and tagging class. Respirator training will be required if you will be wearing a respirator mask.

You will need to be signed on several clearance once Unit 2 is down. TEI be holding the group sheets for these clearances.

**CC:** James Nelson; Phil Hailes; sal@advancedburner.com;  
ssteede@teiservices.com; Sylvan Lovell

**IP7\_027830**

**From:** Howard Hamilton  
**To:** Craig Young  
**Date:** 2/26/2004 11:04:57 AM  
**Subject:** Lan Connection for ABT

ABT Service Representative Markel Larson needs a LAN connection for his lab top computer.

Markel has the cubicle that is located just south of Tim Souters Cubicle.

Markel will be on site for the Months of March and April for the Unit 2 outage.

Your immediate attention to this request is greatly appreciated.

**CC:** James Nelson; Jerry Hintze; Tarkel Larson



**From:** Howard Hamilton  
**To:** Alan Dewsnap  
**Date:** 2/9/2004 12:50:41 PM  
**Subject:** Re: Fwd: burner wts

Thanks your effort is greatly appreciated.

>>> Alan Dewsnap 2/9/2004 12:48:08 PM >>>

Howard, I know another engineer that may be able to shed more light, I will check with him.  
Alan

>>> Howard Hamilton 2/9/2004 12:46:29 PM >>>

The attached email from Alan calls out a wt of 9000 lbs for the B&W Mark V Burners we have installed in Unit 2. Though the email is from B&W I'm a little skeptical based on the fact the they did not have a published wt for our burners and they took a WAG of 9000 lbs. Do you have contacts at B&W that can verify this wt.

Note that Copalite will not be used on the outlet of the coal elbows. ABT is providing a 2"wide tape gasket for this connection.

>>> Alan Dewsnap 2/9/2004 11:02:36 AM >>>

**CC:** ssteede@teiservices.com

**IP7\_027832**

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 12/31/2003 1:35:04 PM  
**Subject:** Revised General Arrangement Drawings

Attached ABT Unit 2 General Arrangement Drawings 03008-100-A01-FW and 03008-100-A01-RW have the following requested revisions marked in red:

1. Each burner has been assigned an IPSC Burner Number as presently exists in Unit 2.
2. The drawing have been marked with a RHSW (Right Hand Side Wall) and a LHSW (Left Hand Side Wall) designation for orientation.
3. An arrow pointing to the West has also been added for orientation.
4. The following statements have been added also for orientation.

"Standing Outside The Boiler Looking South or into The Boiler" - for the Rear Wall

"Standing Outside The Boiler Looking North or into The Boiler" - for the Front Wall

I talked to Sal on the phone on 12/30/03 and discussed the following:

1. The burners will come out marked CW or CCW only. as we discussed earlier this month. Since the burner fronts will be covered with insulation and lagging it would be pointless to mark them with the numbers called out on the drawings.
2. The burners will have no other markings such a serial or model number that will make them unique.
3. The numbering called out on the attached drawings are unique to each burner.
4. Showing the numbering on the arrangement drawings will assist in identifying a specific burner and assist in future reference.

**CC:** James Nelson; Jerry Finlinson; Phil Hailes; tsteede@teiservices.com

**IP7\_027833**

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 2/4/2004 11:51:40 AM  
**Subject:** Burner Throat Welding

Sal: Please review and advise.

The burner throats are being sent out stitch welded and fully welded along the joint of the burner throat. Listed below are the burners in question and attached photos are sent along to help clarify the situation.

Joints Fully Welded and Ground Smooth on The Following Burners:

CW2,1,11,12,4,5, and 9

Joints Stitch Welded on The Following Burners:

CW4,10,13,15,16, and 6

Joint Fully Welded and Not Ground Smooth on The Following Burner:

CW14.

**CC:** James Nelson; Jerry Finlinson; Phil Hailes; ssteede@teiservices.com

**IP7\_027834**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/9/2004 8:03:12 AM  
**Subject:** RE: Welding Clarification

Howard,

Stitch welding these components is in accordance with our design requirements. Some may be stitch welded on either the outside or the inside. The welds you called "spot welds" are actually "tack welds" that are just done to line up the parts during fabrication, then later stitch welded either on the inside or outside.

There is no reason, performance or mechanical, that the components be fully welded.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Friday, February 06, 2004 7:15 PM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes  
Subject: Welding Clarification

Attached photo shown stitch welding of the burner throat.

Our question is why these burner throat seams were stitch welded and not fully welded for their entire length. In fact the the two shroud welds are spot welded.

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

IP7\_027835

**From:** Howard Hamilton  
**To:** tarkel@advancedburner.com  
**Date:** 2/12/2004 12:53:47 PM  
**Subject:** Stitch Welding and Full Penetration Welding of Burners

Photos you requested showing stitch and full penetration welding of the burner throats.

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 2/18/2004 10:02:29 AM  
**Subject:** Tack welding of ABT Burner Throats

Please advise concerning the following.

The attached photos show that CCW 12, CCW 17 and CCW 09 were received with only a tack weld on the outer burner throat longitudinal seams.

This is the first burners to have been fabricated this way.

The burners started out with a full penetration weld ground smooth inside and out, then this evolved into a stitch weld inside and out and now we have a stitch weld inside and a tack weld outside.

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com; Tarkel Larson

**IP7\_027837**

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 2/6/2004 5:15:04 PM  
**Subject:** Welding Clarification

Attached photo shown stitch welding of the burner throat.

Our question is why these burner throat seams were stitch welded and not fully welded for their entire length. In fact the the two shroud welds are spot welded.

**CC:** James Nelson; Phil Hailes

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/9/2004 8:03:12 AM  
**Subject:** RE: Welding Clarification

Howard,

Stitch welding these components is in accordance with our design requirements. Some may be stitch welded on either the outside or the inside. The welds you called "spot welds" are actually "tack welds" that are just done to line up the parts during fabrication, then later stitch welded either on the inside or outside.

There is no reason, performance or mechanical, that the components be fully welded.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Friday, February 06, 2004 7:15 PM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes  
Subject: Welding Clarification

Attached photo shown stitch welding of the burner throat.

Our question is why these burner throat seams were stitch welded and not fully welded for their entire length. In fact the the two shroud welds are spot welded.

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

IP7\_027839



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/5/2004 10:14:50 AM  
**Subject:** RE: Burner Throat Welding

Howard,

It is not necessary to fully weld-out the throat casting segments. Stitch welding was indicated on our detail drawings given to the casting foundry, however they decided to fully weld the first set of throat assemblies. When we received the first set of throat castings at the burner assembly shop, we reminded the foundry that full welding was not required and instructed them to stitch weld them as we initially instructed. Either way, the full weld and stitch weld assemblies, are acceptable to us.

Please let me know if you have other questions.

Regards,  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, February 04, 2004 1:52 PM  
To: sal@advancedburner.com  
Cc: Jerry Finlinson; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Burner Throat Welding

Sal: Please review and advise.

The burner throats are being sent out stitch welded and fully welded along the joint of the burner throat. Listed below are the burners in question and attached photos are sent along to help clarify the situation.

Joints Fully Welded and Ground Smooth on The Following Burners:

CW2,1,11,12,4,5, and 9

Joints Stitch Welded on The Following Burners:

CW4,10,13,15,16, and 6

Joint Fully Welded and Not Ground Smooth on The Following Burner:

CW14.

**CC:** "Jerry Finlinson" <Jerry-F@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>, "Chuck Onaitis" <chuck@advancedburner.com>

**IP7\_027840**

**From:** Mike Alley  
**To:** Stan Smith  
**Date:** 3/18/2004 3:57:07 PM  
**Subject:** west crane hook

The look appears to have flipped at some time. There is damage to the hook from rubbing against something. the picture that show the rubbing of the cable could only occur if the hook was flipped.

**CC:** Howard Hamilton; Phil Hailes

**IP7\_027841**

**From:** Howard Hamilton  
**To:** James Nelson  
**Date:** 3/18/2004 8:28:47 AM  
**Subject:** Cable Rope Failure

Work Order 93-14098-00 was issued to resolve the cable breaking in the Limestone Prep Building. Taussig made a report that identified the cause of the break based on cable sample of the broken ends sent to them for analysis.

Laboratory out of Chicago called Taussig. The contact was the President of the Company a Mr. Lyle Jacobson (708-676-2100).

**CC:** Phil Hailes

**IP7\_027842**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/9/2004 4:34:15 PM  
**Subject:** Fwd: RE: Damper Drive Rod - Too Short?

Jim Roberts cranked one as described below this morning. It went the full 16" as ABT indicates below. Problem resolved.

Hugh: Give a copy to Isely.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/9/2004 8:08:08 AM >>>

Howard,

Did you try to continue cranking the ratchet handle once the all thread is flush with the end bracket? It should continue to adjust to the full 16" opening (the all thread should disappear into the bracket/tube). We have internal stops that will make contact once the full 16" opening is achieved. The shop assures me that full stroke was tested upon completion.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Friday, February 06, 2004 7:06 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: Damper Drive Rod - Too Short?

Attached photos show the outer air damper will not open fully because the damper drive rod is 6" too short.

Please review and advise why the damper is not allowed to open up fully to 16".

**CC:** Hugh Loukinas

**IP7\_027843**

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 2/6/2004 5:06:02 PM  
**Subject:** Damper Drive Rod - Too Short?

Attached photos show the outer air damper will not open fully because the damper drive rod is 6" too short.

Please review and advise why the damper is not allowed to open up fully to 16".

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** James Nelson; Phil Hailes  
**Date:** 2/20/2004 9:02:18 AM  
**Subject:** Fwd. RE. Donut for Lighters

Will this be and extra to TEI to make the rings? Also with a donut there will be two welds instead of one the outer weld on the ring should be and extra?

Is this work backchargable to ABT?

Please advise as TEI should make the donuts next week and I will need to issue a work release asap.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/20/2004 8:49:15 AM >>>

Howard,

We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Wednesday, February 18, 2004 11:39 AM

To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Cc: [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); James Nelson; Phil Hailes;  
[ssteede@teiservices.com](mailto:ssteede@teiservices.com)

Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**IP7\_027845**

**From:** Howard Hamilton  
**To:** Gary Goold  
**Date:** 3/18/2004 7:11:40 AM  
**Subject:** Fwd: Excess Bolts

Gary let me know if you have any questions so that I can have Tarkel resolve them ASAP.

I would also like to thank all of the Warehouse day shift personnel for their quick response and help during this outage. Larry Isely on night shift has told me that there have been many times that the Warehouses extra efforts have saved him time and expedite the burner installation.

Thanks

>>> "Tarkel Larson" <abt-corp@ix.netcom.com> 3/17/2004 4:58:58 PM >>>  
Hi Howard,

Diversified Metal Services Co. contacted me; and is making the arrangements to pickup the 4 buckets of bolts in the Warehouse. Can you advise the Warehouse people of this? ABF or Motor Fright Co. will be the ones to come and collect the bolts.

Thanks,

Tarkel

**CC:** Hugh Loukinas; Tarkel Larson; Vance Bishop

**IP7\_027846**

Complete needs signature.

Sub NO 012

TEI CONSTRUCTION SERVICES, INC.  
PURCHASE ORDER CHANGE REQUEST

04-37477-23

P O R T I O N	PROJECT: BURNER REPLACEMENT		DATE:	
	FCO #: 005		PROJECT #: 80960	
	CUSTOMER: INTERMOUNTAIN POWER PLANT		P.O. #:	
	REASON FOR CHANGE: IPSC REQUEST TO AIR TEST THERMOCOUPLE S/S TUBING ON 32 BURNERS AS THEY ARRIVE AT PLANT SITE. THE REQUEST IS BASED ON <del>ONE HAN HOUR FOR 60 PER</del> <del>BURNER ASSEMBLY AT P&amp;M RATE.</del> T&M Rates			
	DESCRIPTION OF CHANGE: WILL BE DETERMINED WHEN AIR TEST RESULTS ARE COMPLETE. ANOTHER WORK ORDER WILL BE REQUIRED THEN.			
	PEOPLE CONTACTED AND METHODS TAKEN TO RESOLVE PROBLEM: IPP - HOWARD HAMILTON TEI WILL BE TESTING THE TUBE FIT JOINTS FOR LEAKS WITH TEI QC & IPSC REP DOING A VISUAL & SIGN OFF.			
	("X" APPROPRIATE BOX)			
	FIRM PRICE:	TIME & MATERIAL:	NOT TO EXCEED:	X
	TEI SIGNATURE:		LABOR: <del>\$ 1004.00</del> 958.98	
	DATE:		MATERIALS: \$	
RECEIVED BY:		OTHER: \$		
DATE:		TOTAL: <del>\$ 1004.00</del> 958.98		
C U S T O M E R	EXISTING APPROVED PURCHASE ORDER:		\$ 958.98	
	THIS FCO:		\$	
	OTHER APPROVED FCO'S:		\$	
	NEW PURCHASE ORDER:		\$	
BY SIGNATURE BELOW, TEI IS AUTHORIZED TO PROCEED ON ABOVE REFERENCED CHANGE, TO THE ORIGINAL CONTRACT AT THE SUBMITTED PRICE AND CONDITIONS.				
A P P R O V A L	CUSTOMER COORDINATOR APPROVAL:		PROJECT MANAGEMENT APPROVAL:	
	SIGNATURE:		SIGNATURE:	
	DATE:		DATE:	
	3-1-04		3-1-04	

IP7\_027847



**TEI Construction Services, Inc.  
T&M Billing Cost Summary**

PROJECT:  
Client: Intermountain Power Plant  
Progress Energy PO#:

TEI PROJECT: 80960  
TEI FCO#: EWO-005

LABOR		
Week Ending	Hours	Amount
	20	\$740.76

Totals	20	\$740.76
--------	----	----------

TOTAL LABOR	\$740.76
-------------	----------

SMALL TOOLS & CONSUMABLES		
Hours	Cost Per Hour	Amount
20	\$3.75	\$75.00

TOTAL SMALL TOOLS & CONSUMABLES	\$75.00
---------------------------------	---------

MATERIAL			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Material			\$0.00

SUBCONTRACTORS			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Subcontractors			\$0.00

RENTAL EQUIPMENT			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Rental Equipment			\$0.00

Description	Rental Period	Amount
Total TEI Rental Equipment		\$0.00

TOTAL BILLING	\$815.76
---------------	----------

IP7\_027848

**TEI Construction Services, Inc.  
T&M Billing Weekly Labor**

PROJECT 80960  
CLIENT INTERMOUNTAIN POWER PLANT  
TEI NO.  
ORDER NO.  
EWO NO. 005

CRAFT CLASS	ST HOURS	@	TOTALS	OT HOURS	@	TOTALS
Superintendent		\$66.88	\$0.00		\$93.67	\$0.00
General Foreman		\$46.65	\$0.00		\$67.32	\$0.00
Foreman		\$43.59	\$0.00		\$62.72	\$0.00
Cert Welder		\$33.67	\$0.00		\$50.51	\$0.00
Mechanic	16	\$33.67	\$538.72	4	\$50.51	\$202.04
Apprentice		\$27.55	\$0.00		\$41.33	\$0.00
Helper		\$24.49	\$0.00		\$36.74	\$0.00
Laborer		\$18.37	\$0.00		\$27.55	\$0.00
Field Clerk		\$42.06	\$0.00		\$60.43	\$0.00
<b>TOTALS</b>	<b>16</b>		<b>\$538.72</b>	<b>4</b>		<b>\$202.04</b>

TOTAL BILLING      \$740.76

IP7\_027849

**SHIFT:**

[illegible]

**Material:**

**Customer Approval:**



**INTERMOUNTAIN POWER SERVICE CORP.**  
Delta, Utah 84624-9546 (435) 864-4414 - Purchasing FAX (435) 864-6676

**VENDOR: TEI CONSTRUCTION SERVICES INC.**  
7870 SCHILLINGER PARK WEST  
MOBILE, AL 36608

# PURCHASE ORDER

18 FEB 2004

VENDOR MUST SHOW P.O. NUMBER ON ALL INVOICES, BILL OF LADING, CONNERSHOP DENCE, AND ON PACKING LISTS IN EACH CONTAINER, TO INSURE PROMPT PAYMENT. CHARGES FOR TRANSPORTATION MUST BE SUPPORTED BY COPY OF FREIGHT BILL

PURCHASE ORDER NO. 04-37477	VENDOR CODE 8149	REQUISITION MULTI
--------------------------------	---------------------	----------------------

**\*\*\* SHIP TO \*\*\***  
**INTERMOUNTAIN POWER SERVICE CORPORATION**  
850 W. BRUSH WELLMAN RD.  
DELTA, UT 84624-9546

251-633-4181 OR 864-879-6860

CONFIRMING DO NOT DUPLICATE	NON CONFIRMING X	SHIP VIA VENDOR	TERMS NET 30	FOB POINT DESTINATION F/A	PAGE OF 1 2	FAX
-----------------------------	------------------	-----------------	--------------	---------------------------	-------------	-----

INTERMOUNTAIN POWER SERVICE CORPORATION'S STANDARD TERMS AND CONDITIONS ARE INCLUDED AS PART OF THIS AGREEMENT

QUANTITY ORDERED	U M	IPSC PART NO.	DESCRIPTION	ACCOUNT NUMBER	UNIT PRICE	EXTENSION
169	EA	#7	LINE 1 SERVICE: WELDING, BURNER TESTING	2SGX-503 03-96033-19	67.34	11,380
1	EA	#4	LINE 2 TESTING: CONTROLS, DAMPER & VANE	2SGX-402 03-96033-16	808.08	808
1	EA	#5	LINE 3 TESTING: BURNERS, THIRTY-TWO (32)	2SGX-402 03-96033-12	958.98	958
1	EA	#6	LINE 4 REPAIR: ARMS, DAMPER DRIVE, TWO (2)	2SGX-402 03-96033-18	740.74	740
			NB/CLE			
			**NOTE: BY REFERENCE, ALL TERMS & CONDITIONS OF CONTRACT NO. 04-45618 SHALL APPLY**			

- Invoices and correspondence may be mailed to Intermountain Power Service Corporation, 850 West Brush Wellman Rd., Delta, Utah, 84624-9546.
- Acknowledgement is required if shipment will not be made within FIVE days.
- Mark packages or items with IPSC part number and/or P.O. Line number. Show number on invoice and packing slip.
- Vendor must furnish applicable material safety data sheets.

UTAH VENDORS ARE TO ADD TO THE INVOICE ALL APPLICABLE STATE, AND COUNTY TAXES.

OUT OF STATE VENDORS, LICENSED TO COLLECT UTAH TAXES, ARE TO ADD TAX OF 6%.

UTAH TAX WILL BE ACCRUED BY IPSC FOR VENDORS NOT LICENSED TO

BUYER

IP7\_027851

Comp. Ready for signature

Sub WO 012

TEI CONSTRUCTION SERVICES, INC.  
PURCHASE ORDER CHANGE REQUEST 04-45618-004

T E I  P O R T I O N	PROJECT:		DATE:	
	FCO # 002		PROJECT #: 80960	
	CUSTOMER: INTERMOUNTAIN POWER PLANT		P.O. #:	
	REASON FOR CHANGE:			
	IPP REQUEST TO AIR TEST THERMOCOUPLE S/S TUBING ON 16 BURNERS THAT TEMPORARILY PLACED AT DIFFERENT ELEVATIONS ON STRUCTURE.			
	DESCRIPTION OF CHANGE:			
	WILL BE DETERMINED WHEN AIR TEST RESULTS ARE COMPLETE. ANOTHER WORK ORDER WILL BE REQUIRED THEN.			
	PEOPLE CONTACTED AND METHODS TAKEN TO RESOLVE PROBLEM:			
	IPP - HOWARD HAMILTON TEI WILL BE TESTING THE TUBING WITH TEI QC INSPECTOR & IPP REP. DOING A VISUAL & SIGN OFF.			
	("X" APPROPRIATE BOX)			
C U S T O M E R  A P P R O V A L	FIRM PRICE:	TIME & MATERIAL:	NOT TO EXCEED:	X
	TEI SIGNATURE:		LABOR: \$ 474.16	
	DATE:		MATERIALS: \$ 20.00	
	RECEIVED BY:		OTHER: \$	
	DATE:		TOTAL: \$ 494.16	
	EXISTING APPROVED PURCHASE ORDER:		\$	
	THIS FCO:		\$	
	OTHER APPROVED FCO'S:		\$	
	NEW PURCHASE ORDER:		\$	
	BY SIGNATURE BELOW, TEI IS AUTHORIZED TO PROCEED ON ABOVE REFERENCED CHANGE, TO THE ORIGINAL CONTRACT AT THE SUBMITTED PRICE AND CONDITIONS.			
CUSTOMER COORDINATOR APPROVAL:		PROJECT MANAGEMENT APPROVAL:		
SIGNATURE:		SIGNATURE:		
DATE:		DATE:		
3/1/04		3-1-04		

IP7\_027852





# PURCHASE ORDER

25 FEB 2004

DENCE, AND ON PACKING LISTS IN EACH CONTAINER, TO INSURE PROMPT PAYMENT.  
CHARGES FOR TRANSPORTATION MUST BE SUPPORTED BY COPY OF FREIGHT BILL.

PURCHASE ORDER NO.	VENDOR CODE	REQUISITION NO
04-45618-004	8149	200476

\* \* \* S H I P T O \* \* \*  
INTERMOUNTAIN POWER SERVICE CORPORATION  
850 W. BRUSH WELLMAN RD.  
DELTA , UT 84624-9546

INTERMOUNTAIN POWER SERVICE CORP.  
Delta, Utah 84624-9546 (435) 864-4414 - Purchasing FAX (435) 864-8678  
VENDOR: TEI CONSTRUCTION SERVICES INC.  
7870 SCHILLINGER PARK WEST  
MOBILE, AL 36608

251-633-4181 OR 864-879-6860

CONFIRMING DO OT DUPLICATE	NON CONFIRMING X	SHIP VIA VENDOR TRUCK	TERMS AS INVOICED	FOB POINT DESTINATION F/A	PAGE OF 1 1	FAX
-------------------------------	---------------------	--------------------------	----------------------	------------------------------	----------------	-----

INTERMOUNTAIN POWER SERVICE CORPORATION'S STANDARD TERMS AND CONDITIONS ARE INCLUDED AS PART OF THIS AGREEMENT

QUANTITY ORDERED	U M	IPSC PART NO.	DESCRIPTION	ACCOUNT NUMBER	UNIT PRICE	EXTENSION
1	EA		LINE 1 AIR TESTING OF SIXTEEN (16) NEW BURNERS  RELEASE # 4 AGAINST SERVICE CONTRACT # S45618 PURCHASE PRIORITY #4 APPRD BY G CROSS  *** SERVICE CONTRACT DESCRIPTION *** INSTALLATION OF LOW NOX BURNERS, ANCILLARY HARDWARE, & ASSOCIATED FLAME DETECTION SYSTEMS IN UNIT 2  *****ATTENTION IPSC WAREHOUSE***** PLEASE RECEIVE. PO IS FOR SERVICES, FEES, DUES, PREMIUMS, TUITION, AND MISCELLANEOUS CHARGES. NO MATERIAL WILL BE RECEIVED.  DATE REQUIRED 02/25/04	2SGX-402 03-96033-12	494.00	494.00
TOTAL COST						494.00

Invoices and correspondence may be mailed to Intermountain Power Service Corporation, 850 West Brush Wellman Rd., Delta, Utah, 84624-9546.

Acknowledgement is required if shipment will not be made within FIVE days.

Mark packages or items with IPSC part number and/or P.O. Line number.  
Show number on invoice and packing slip.

Vendor must furnish appropriate material safety data sheets.

Add to invoice all applicable federal taxes

UTAH VENDORS ARE TO ADD TO THE INVOICE  
ALL APPLICABLE STATE, AND COUNTY TAXES.

OUT OF STATE VENDORS, LICENSED TO  
COLLECT UTAH TAXES, ARE TO ADD TAX OF 6%.

UTAH TAXES WILL ACCRUED BY IPSC FOR  
OUT OF STATE VENDORS NOT LICENSED TO

NANCY BENNETT 435-864-4414

REVIEWED BY NANCY BENNETT

IP7\_027854

**TEI Construction Services, Inc.  
T&M Billing Cost Summary**

PROJECT:  
Client: Intermountain Power Plant  
Progress Energy PO#:

TEI PROJECT: 80960  
TEI FCO#: EWO-002

LABOR		
Week Ending	Hours	Amount
	10	\$370.38

Totals	10	\$370.38
--------	----	----------

TOTAL LABOR	\$370.38
-------------	----------

SMALL TOOLS & CONSUMABLES		
Hours	Cost Per Hour	Amount
10	\$3.75	\$37.50

TOTAL SMALL TOOLS & CONSUMABLES	\$37.50
---------------------------------	---------

MATERIAL			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Material			\$0.00

SUBCONTRACTORS			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Subcontractors			\$0.00

RENTAL EQUIPMENT			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Rental Equipment			\$0.00

Description	Rental Period	Amount
Total TEI Rental Equipment		\$0.00

TOTAL BILLING	<u>\$407.88</u>
---------------	-----------------

IP7\_027855



**IP7\_027856**

CRAFT CLASS	ST HOURS	@	TOTALS	OT HOURS	@	TOTALS
Superintendent		\$66.88	\$0.00		\$93.67	\$0.00
General Foreman		\$46.65	\$0.00		\$67.32	\$0.00
Foreman		\$43.59	\$0.00		\$62.72	\$0.00
Cert Welder		\$33.67	\$0.00		\$50.51	\$0.00
Mechanic	8	\$33.67	\$269.36	2	\$50.51	\$101.02
Apprentice		\$27.55	\$0.00		\$41.33	\$0.00
Helper		\$24.49	\$0.00		\$36.74	\$0.00
Laborer		\$18.37	\$0.00		\$27.55	\$0.00
Field Clerk		\$42.06	\$0.00		\$60.43	\$0.00
TOTALS	8		\$269.36	2		\$101.02

**TOTAL BILLING** **\$370.38**

Complete & ready for signature

Sub No 018

TEI CONSTRUCTION SERVICES, INC.  
PURCHASE ORDER CHANGE REQUEST

04-37477-L4

T E I  P O R T I O N  C U S T O M E R  A P P R O V A L	PROJECT: DAMAGED SLEEVE DAMPER DRIVE		DATE: 02-09-04	
	FCO #: 006		PROJECT #: 80960	
	CUSTOMER: IPSC		P.O. #:	
	REASON FOR CHANGE: IPSC REQUEST - DAMPER DRIVE GOT BENT IN SHIPPING - (2 BURNERS)			
	DESCRIPTION OF CHANGE: 1.UNBOLT, 2.INSPECT, 3.CUT-OUT, 4.GRIND, WELD, PREP EXISTING ROD, 5.WELD, 6.REINSTALL, 7.INSPECT			
	PEOPLE CONTACTED AND METHODS TAKEN TO RESOLVE PROBLEM: IPSC - HOWARD HAMILTON REMOVE & REPLACE OLD ROD'S WITH NEW ROD'S			
	("X" APPROPRIATE BOX)			
	FIRM PRICE:	TIME & MATERIAL:	NOT TO EXCEED:	
	TEI SIGNATURE:		LABOR: \$740.74	
	DATE:		MATERIALS: \$0	
RECEIVED BY:		OTHER: \$0		
DATE:		TOTAL: \$740.74		
EXISTING APPROVED PURCHASE ORDER:		\$		
THIS FCO:		\$		
OTHER APPROVED FCO'S:		\$		
NEW PURCHASE ORDER:		\$		
BY SIGNATURE BELOW, TEI IS AUTHORIZED TO PROCEED ON ABOVE REFERENCED CHANGE, TO THE ORIGINAL CONTRACT AT THE SUBMITTED PRICE AND CONDITIONS.				
CUSTOMER COORDINATOR APPROVAL:		PROJECT MANAGEMENT APPROVAL:		
SIGNATURE:		SIGNATURE:		
DATE:		DATE:		
3/2/04		3-2-04		

IP7\_027857



**IP7\_027859**

CRAFT CLASS	ST HOURS	@	TOTALS	OT HOURS	@	TOTALS
Superintendent		\$66.88	\$0.00		\$93.67	\$0.00
General Foreman		\$46.65	\$0.00		\$67.32	\$0.00
Foreman		\$43.59	\$0.00		\$62.72	\$0.00
Cert Welder		\$33.67	\$0.00		\$50.51	\$0.00
Mechanic	16	\$33.67	\$538.72	4	\$50.51	\$202.04
Apprentice		\$27.55	\$0.00		\$41.33	\$0.00
Helper		\$24.49	\$0.00		\$36.74	\$0.00
Laborer		\$18.37	\$0.00		\$27.55	\$0.00
Field Clerk		\$42.06	\$0.00		\$60.43	\$0.00
TOTALS	16		\$538.72	4		\$202.04

**TOTAL BILLING** **\$740.76**

**IP7\_027860**

Feb 4, 2004

#### Repair Procedure for Damaged Sleeve Damper Drives

- 1 Operate the drive, if it operates smoothly with no "hard" spots as the sleeve damper moves no repairs will be necessary. If it binds do the following.
- 2 Check the drive support channel to make sure it is square to the burner front plate. A variation of up to 1/16" is acceptable in both directions. If it exceeds this, contact ABT for further directions. It may require replacement of the entire drive unit.
- 3 Determine where the drive rod is bent and cut it off 1" beyond the bend, or just beyond the end of the threaded section.
- 4 Unbolt the ratchet drive support brackets from the frame, remove the bent threaded section and discard it.
- 5 Inspect the ratchet drive for damage. If it is damaged, contact ABT for a replacement unit.
- 6 Cut a new section from the threaded rod furnished by ABT, the same length as the section cut off in #3.
- 7 Grind a weld prep on both ends of the pieces to be joined, align the two sections so that they are straight, and weld them together with a full penetration weld. (Both pieces are carbon steel)
- 8 Reinstall the ratchet drive and support brackets.
- 9 Check the operation of the drive to assure that it operates smoothly, with no binding.

Attachments: 03008-300-A00-D0 AIR REGISTER ASSEMBLY  
03008-600-A03-0 RATCHET DRIVE ASSEMBLY

Charles C. Onaitis

Cc: Sal Ferrara

IP7\_027861



INTERMOUNTAIN POWER SERVICE CORP.  
Delta, Utah 84624-9546 (435) 864-4414 - Purchasing FAX (435) 864-8678

VENDOR: TEI CONSTRUCTION SERVICES INC.  
7870 SCHILLINGER PARK WEST  
MOBILE, AL 36608

# PURCHASE ORDER

18 FEB 2004

VENDOR MUST SHOW P.O. NUMBER ON ALL INVOICES, BILL OF LADING, CORRESPONDENCE, AND ON PACKING LISTS IN EACH CONTAINER, TO INSURE PROMPT PAYMENT. CHARGES FOR TRANSPORTATION MUST BE SUPPORTED BY COPY OF FREIGHT BILL.

PURCHASE ORDER NO.	VENDOR CODE	REQUISITION
04-37477	8149	MULTI

\*\*\* SHIP TO \*\*\*  
INTERMOUNTAIN POWER SERVICE CORPORATION  
850 W. BRUSH WELLMAN RD.  
DELTA, UT 84624-9546

251-633-4181 OR 864-879-6860

CONFIRMING DO NOT DUPLICATE	NON CONFIRMING X	SHIP VIA VENDOR	TERMS NET 30	FOB POINT DESTINATION F/A	PAGE 1 OF 2	FAX
-----------------------------	------------------	-----------------	--------------	---------------------------	-------------	-----

## INTERMOUNTAIN POWER SERVICE CORPORATION'S STANDARD TERMS AND CONDITIONS ARE INCLUDED AS PART OF THIS AGREEMENT

QUANTITY ORDERED	U M	IPSC PART NO.	DESCRIPTION	ACCOUNT NUMBER	UNIT PRICE	EXTENSION
169	EA	#7	LINE 1 SERVICE: WELDING, BURNER TESTING	2SGX-503 03-96033-19	67.34	11,380
1	EA	#4	LINE 2 TESTING: CONTROLS, DAMPER & VANE	2SGX-402 03-96033-16	808.08	808
1	EA	#5	LINE 3 TESTING: BURNERS, THIRTY-TWO (32)	2SGX-402 03-96033-12	958.98	958
1	EA	#6	LINE 4 REPAIR: ARMS, DAMPER DRIVE, TWO (X) 1	2SGX-402 03-96033-18	740.74	740
NB/CLE						
**NOTE: BY REFERENCE, ALL TERMS & CONDITIONS OF CONTRACT NO. 04-45618 SHALL APPLY**						

Invoices and correspondence may be mailed to Intermountain Power Service Corporation, 850 West Brush Wellman Rd., Delta, Utah, 84624-9546.

Acknowledgement is required if shipment will not be made within FIVE days.

Mark packages or items with IPSC part number and/or P.O. Line number.  
Show number Invoice and packing slip.

Vendor must furnish applicable material safety data sheets.

UTAH VENDORS ARE TO ADD TO THE INVOICE ALL APPLICABLE STATE, AND COUNTY TAXES.

OUT OF STATE VENDORS, LICENSED TO COLLECT SALES TAXES, ARE TO ADD TAX OF 8%.

DELTA, UT 84624-9546

BUYER

IP7\_027862

Sub WO# 019

**PURCHASE ORDER CHANGE REQUEST** 04-37477-41

04-37477-41

**TEI PORTION**

---

**CUSTOMER APPROVAL**

**IP7\_027863**





**INTERMOUNTAIN POWER SERVICE CORP.**

Delta, Utah 84624-9546 (435) 864-4414 - Purchasing FAX (435) 864-8678

**VENDOR: TEI CONSTRUCTION SERVICES INC.**  
7870 SCHILLINGER PARK WEST  
MOBILE, AL 36608

# PURCHASE ORDER

18 FEB 2004

VENDOR MUST SHOW P.O. NUMBER ON ALL INVOICES, BILL OF LADING, AND ON PACKING LISTS IN EACH CONTAINER. TO CHARGES FOR TRANSPORTATION MUST BE SUPPORTED BY

ADDITIONAL CORRESPONDENCE. PROMPT PAYMENT. OF FREIGHT BILL.

PURCHASE ORDER NO.	VENDOR CODE	REQUISITION NO.
04-37477	8149	MULTI

**\*\*\* SHIP TO \*\*\***  
**INTERMOUNTAIN POWER SERVICE CORPORATION**  
850 W. BRUSH WELLMAN RD.  
DELTA, UT 84624-9546

251-633-4181 OR 864-879-6860

CONFIRMING DO NOT DUPLICATE	NON CONFIRMING X	SHIP VIA VENDOR	TERMS NET 30	FOB POINT DESTINATION F/A	PAGE OF 1 2	FAX
-----------------------------	------------------	-----------------	--------------	---------------------------	-------------	-----

INTERMOUNTAIN POWER SERVICE CORPORATION'S STANDARD TERMS AND CONDITIONS ARE INCLUDED AS PART OF THIS AGREEMENT

QUANTITY ORDERED	U M	IPSC PART NO.	DESCRIPTION	ACCOUNT NUMBER	UNIT PRICE	EXTENSION
169	EA		LINE 1 SERVICE: WELDING, BURNER TESTING	2SGX-503 03-96033-19	67.34	11,380.46
1	EA		LINE 2 TESTING: CONTROLS, DAMPER & VANE	2SGX-402 03-96033-16	808.08	808.08
1	EA		LINE 3 TESTING: BURNERS, THIRTY-TWO (32)	2SGX-402 03-96033-12	958.98	958.98
1	EA		LINE 4 REPAIR: ARMS, DAMPER DRIVE, TWO (2)	2SGX-402 03-96033-18	740.74	740.74
			NB/CLE			
			**NOTE: BY REFERENCE, ALL TERMS & CONDITIONS OF CONTRACT NO. 04-45618 SHALL APPLY**			

1. Invoices and correspondence may be mailed to Intermountain Power Service Corporation, 850 West Brush Wellman Rd., Delta, Utah, 84624-9546.

2. Acknowledgement is required if shipment will not be made within FIVE days.

3. Mark packages or items with IPSC part number and/or P.O. Line number. Show number on invoice and packing slip.

4. Vendor must furnish applicable material safety data sheets.

5. Add to invoice all applicable federal taxes.

UTAH VENDORS ARE TO ADD TO THE INVOICE ALL APPLICABLE STATE, AND COUNTY TAXES.

OUT OF STATE VENDORS, LICENSED TO COLLECT UTAH TAXES, ARE TO ADD TAX OF 6%.

UTAH TAXES WILL BE ACCRUED BY IPSC FOR OUT OF STATE VENDORS NOT LICENSED TO

BUYER

IP7\_027864

02/26	COUPLING REQUIRES 2 WELDS , CROSS REQUIRES 4 WELDS	AIR TEST	LOCATION	Compl.	INT.
RNER		WELDS			
CW-01	TP-GOUGE IN TUBE, NO LEAKS	0	5R	0	✓ JM
CW-02	REPAIRED, TESTED GOOD	0	6F	0	✓ JM
CW-03	TP-3 SIDES OF CROSS, TP-TOP COUP.	6	7R	6	✓ JM
CW-04	SP-TUBE TO PIPE, 11:00 COUP.	3	6R	3	✓ JM
CW-05	SP-CROSS(3), 11:00 COUP / TP-CROSS(2), 11:00 & BOTTOM COU	14	6R	14	✓ JM
CW-06	SP-TOP COUP.	2	7R	2	✓ JM
CW-07	NO LEAKS	0	6F	0	✓ JM
CW-08	TP-TOP OF CROSS	4	6R	4	✓ JM
CW-09	TP-TOP OF CROSS	4	4R	4	✓ JM
CW-10	NO LEAKS	0	6F	0	✓ JM
CW-11	NO LEAKS	0	5R	0	✓ JM
CW-12	NO LEAKS	0	5R	0	✓ JM
CW-13	SP- CROSS(1), 2:00 COUP. / TP-TOP, 2:00 & 11:00 COUP.	16	5F	16	✓ JM
CW-14	SP & TP 8:00 COUP.	4	7R	4	✓ JM
CW-15	TP- 2:00 & 6:00 COUP. / SP- 6:00 COUP.	6	5F	6	✓ JM
CW-16	SP-TOP COUP. / TP- 11:00 COUP.	6	5F	6	✓ JM
CW-17	SP- 6:00 COUP.	2	4R	2	✓ JM
CW-18	SP-CROSS(1), 2:00 COUP.	6	7F	6	✓ JM
CW-19	TP- 11:00 COUP. / SP- CROSS (1), 2:00 & 6:00 COUP.	10	7F	10	✓ JM
CW-20	TP- 2:00 COUP. / SP- 6:00 COUP.	4	4R	4	✓ JM
CW-21	SP- 2:00, 6:00, & 11:00 COUP	6	G	0	
CW-22	TP- 8:00 COUP. / SP- CROSS (1), 2:00 & 11:00 COUP.	10	G	0	
CW-23	NO LEAKS	0	G	0	✓ JM
CW-24	TP- 6:00 & 11:00 COUP.	4	7F	4	✓ JM
CCW-01	SP- CROSS(1)	4	5F	4	✓ JM
CCW-02	SP- CROSS(1), 10:00 COUP. / TP- CROSS(1), 2:00 & 10:00 COUP.	14	5F	14	✓ JM
CCW-03	TP- 11:00 COUP.	2	7F	2	✓ JM
CCW-04	NO LEAKS	0	7F	0	✓ JM
CCW-05	TP- CROSS(1)	6	5F	6	✓ JM
CCW-06	SP- 10:00 COUP.	2	6F	2	✓ JM
CCW-07	SP-CROSS(1), 10:00 COUPL. / TP- 10:00 COUP.	8	6F	8	✓ JM
CCW-08	TP- 10:00 COUP.	2	6F	2	✓ JM
CCW-09	NO LEAKS	0	7R	0	✓ JM
CCW-10	NO LEAKS	0	7R	0	✓ JM
CCW-11	NO LEAKS	0	7R	0	✓ JM
CCW-12	NO LEAKS	0	6R	0	✓ JM
CCW-13	NO LEAKS	0	4R	0	✓ JM
CCW-14	NO LEAKS	0	5R	0	✓ JM
CCW-15	NO LEAKS	0	4R	0	✓ JM
CCW-16	NO LEAKS	0	5R	0	✓ JM
CCW-17	TP- TOP COUP.	2	6R	2	✓ JM
CCW-18	NO LEAKS	0	7F	0	✓ JM
CCW-19	NO LEAKS	0	6R	0	✓ JM
CCW-20	NO LEAKS	0	5R	0	✓ JM
CCW-21	NO LEAKS	0	G	0	✓ JM
CCW-22	SP-6:00 COUP.	2	G	0	
CCW-23	NO LEAKS	0	G	0	✓ JM
CCW-24	NO LEAKS	0	4F	0	✓ JM

**TEI Construction Services, Inc.  
T&M Billing Cost Summary**

PROJECT:  
Client: Intermountain Power Plant  
Progress Energy PO#:

TEI PROJECT: 80960  
TEI FCO#: EWO-002

LABOR		
Week Ending	Hours	Amount
	<del>265</del> 265	<del>\$370.38</del> 9280 <sup>47</sup>

Totals ~~265~~ 265 ~~\$370.38~~ 9280<sup>47</sup> 9280<sup>47</sup>  
TOTAL LABOR ~~\$370.38~~

SMALL TOOLS & CONSUMABLES		
Hours	Cost Per Hour	Amount
<del>40</del> 265	\$3.75	<del>\$149.80</del> 993 <sup>75</sup>
TOTAL SMALL TOOLS & CONSUMABLES		993 <sup>75</sup> <del>\$149.80</del>

MATERIAL		
Vendor	PO#	Invoice #
		Sub Total
		\$0.00
		10% Mark-Up
		\$0.00
Total Material		\$0.00

SUBCONTRACTORS		
Vendor	PO#	Invoice #
		Sub Total
		\$0.00
		10% Mark-Up
		\$0.00
Total Subcontractors		\$0.00

RENTAL EQUIPMENT		
Vendor	PO#	Invoice #
		Sub Total
		\$0.00
		10% Mark-Up
		\$0.00
Total Rental Equipment		\$0.00

Description	Rental Period	Amount
Total TEI Rental Equipment		\$0.00

TOTAL BILLING

~~\$107.12~~  
\$10,274<sup>22</sup>

IP7\_027866

**IP7\_027867**

3905<sup>89</sup>  
4835<sup>83</sup>  
583<sup>80</sup>

9280<sup>47</sup>

**\$370.38**

	CW	MECH	HLPR
2/23	16/4		
2/26	8/2		
2/20	8/2	48/12	16/4
2/24	32/8		
2/25	32/8	8/2	
2/23		8/2	
2/24		8/2	
2/25		4/1	
2/26		16/4	
2/27		<u>20/6</u>	
	<u>80/24</u>	112/29	<u>16/4</u>

265 TOTAL HOURS

**DAILY TIMESHEET**

DAY / DATE: MON.-2-23-04

SHIFT: 1  
03-96033-19

**T&M TIMESHEET**

[illegible]

**Equipment:**

**Material:**

TEI Approval:

**Customer Approval:**

**IP7\_027869**

TEI CONSTRUCTION SERVICES, INC.

DAILY TIMESHEET

DAY / DATE: Thu, - 2-26-04

SHIFT:

1 & 1A TIMESHEET

<<< JOB NUMBERS >>>

EMPLOYEE

CRAFT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

ST/OT

5/5 Pilot  
tube  
Repair

EXTRA

007

411

411

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

TOTALS

812

Equipment:

Material:

TEI Approval:

Customer Approval:

IP7\_027870





SHIFT: 1 03-96033-19  
T&M TIMESHEET

**DESCRIPTION OF WORK PERFORMED**

## \* Pitot tube Repair

EXTRA.

[illegible]

TEI Approval: \_\_\_\_\_

**Customer Approval:**

**Equipment:**

**Material:**

**IP7\_027872**

SHIFT: 1

### DESCRIPTION OF WORK PERFORMED

5/8 tube  
(Pitot)  
Repair  
EXTRA

T&amp;M TIMESHEET

<<< JOB NUMBERS >>>

[illegible]

**TEI Approval:**

**Customer Approval:**

**Equipment:**

**Material:**

LW 32/8  
MCH 8/2

MCH 8/2

**IP7\_027873**

SHIFT: 1 *D/S* *TRM T/S*

Hole  
Penetr-  
ation  
Seal  
Rings  
007  
EXTRA

[illegible]

TEI Approval:

**Customer Approval:**

**Equipment:**

**Material:**

**IP7\_027874**

**DAILY TIMESHEET**

SHIFT: 1 *0/3*

SHIP 111 2/5

**Equipment:**

**Material:**

**TET Approval:**

**Customer Approval:**

Page 1 of 4

**IP7\_027875**

SHIFT: 1 D/S

SHIFT: 1 *D/S*

Pitot  
Tubing

EMMA

[illegible]

TEI Approval:

**Customer Approval:**

**Equipment:**

**Material:**

TEI CONSTRUCTION SERVICES, INC.

DAILY TIMESHEET

DAY/DATE: FRI-2-27-04

SHIFT: 1/2 7:00 AM - 3:00 PM

DESCRIPTION OF WORK PERFORMED

EMPLOYEE		ST/OT														TOTALS	
EMP	SSJOB NUMBERS	CRFT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	ST/OT	PD/DAYS
Pilot Tubing																	
EXTRA																	
DO-7																	
James Roberts	MECH	412	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Thomas Howard	MECH	412	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MICHAEL Cox	MECH	412	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BRADLEY FAUWARS	MECH	412	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BRENN CRIFT	MECH	412	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTALS																2016	0

Equipment: \_\_\_\_\_  
Material: \_\_\_\_\_

TEI Approval:   
Customer Approval: 

Comp. & Needs signature

SUB NO\*020

TEI CONSTRUCTION SERVICES, INC.

PURCHASE ORDER CHANGE REQUEST 04-45618-003

T E I  P O R T I O N	PROJECT: BURNER REPLACEMENT		DATE: 02/18/04	
	FCO #: 010		PROJECT #: 80960	
	CUSTOMER: IPSC		P.O. #:	
	REASON FOR CHANGE: IPSC REQUEST - WRONG SIZE OUTER SEAL RING ON BURNER ASSEMBLY			
	DESCRIPTION OF CHANGE: 1 - REMOVE OLD RING & REPLACE WITH NEW ONE. (48)			
	PEOPLE CONTACTED AND METHODS TAKEN TO RESOLVE PROBLEM: IPSC - HOWARD HAMILTON 1 - SETUP FOR BURNING RIG & GRINDER 2 - CUT OLD PIECE LOOSE & CLEAN WELDS 3 - INSTALL NEW PIECE & TACK WELD ("X" APPROPRIATE BOX)			
	FIRM PRICE:	TIME & MATERIAL:	NOT TO EXCEED:	X
	TEI SIGNATURE:		LABOR: \$ 3,232.32	
	DATE:		MATERIALS: \$	
	RECEIVED BY:		OTHER: \$	
DATE:		TOTAL: \$ 3,232.32		
C U S T O M E R	EXISTING APPROVED PURCHASE ORDER:		\$	
	THIS FCO:		\$	
	OTHER APPROVED FCO'S:		\$	
	NEW PURCHASE ORDER:		\$	
BY SIGNATURE BELOW, TEI IS AUTHORIZED TO PROCEED ON ABOVE REFERENCED CHANGE, TO THE ORIGINAL CONTRACT AT THE SUBMITTED PRICE AND CONDITIONS.				
A P P R O V A L	CUSTOMER COORDINATOR APPROVAL:		PROJECT MANAGEMENT APPROVAL:	
	SIGNATURE:		SIGNATURE:	
	DATE:		DATE:	
	02/20/04			

IP7\_027879



PROJECT: .  
Client: Intermountain Power Plant  
Progress Energy PO#:

LABOR		
Week Ending	Hours	Amount
	88	\$3,232.40

<b>TOTAL LABOR</b>	<b>\$3,232.40</b>
--------------------	-------------------

<b>TOTAL SMALL TOOLS &amp; CONSUMABLES</b>	<b>\$330.00</b>
--	-----------------

<b>Total Material</b>	<b>\$0.00</b>
-----------------------	---------------

<b>Total Subcontractors</b>	<b>\$0.00</b>
-----------------------------	---------------

<b>Total Rental Equipment</b>	<b>\$0.00</b>
-------------------------------	---------------

<b>Total TEI Rental Equipment</b>	<b>\$0.00</b>
-----------------------------------	---------------

<b>TOTAL BILLING</b>	<b><u>\$3,562.40</u></b>
----------------------	--------------------------

**IP7\_027880**

**TEI Construction Services, Inc.**  
**T&M Billing Weekly Labor**

PROJECT 80960  
CLIENT INTERMOUNTAIN POWER PLANT  
TEI NO.  
ORDER NO.  
EWO NO. 010

CRAFT CLASS	ST HOURS	@	TOTALS	OT HOURS	@	TOTALS
Superintendent		\$66.88	\$0.00		\$93.67	\$0.00
General Foreman		\$46.65	\$0.00		\$67.32	\$0.00
Foreman		\$43.59	\$0.00		\$62.72	\$0.00
Cert Welder		\$33.67	\$0.00		\$50.51	\$0.00
Mechanic	72	\$33.67	\$2,424.24	16	\$50.51	\$808.16
Apprentice		\$27.55	\$0.00		\$41.33	\$0.00
Helper		\$24.49	\$0.00		\$36.74	\$0.00
Laborer		\$18.37	\$0.00		\$27.55	\$0.00
Field Clerk		\$42.06	\$0.00		\$60.43	\$0.00
<b>TOTALS</b>	<b>72</b>		<b>\$2,424.24</b>	<b>16</b>		<b>\$808.16</b>

**TOTAL BILLING** **\$3,232.40**

**IP7\_027881**

**SHIFT:**

[illegible]

**Material:**

**Customer Approval:**

**IP7\_027882**

**SHIFT:**

[illegible]

TEI Approval: \_\_\_\_\_  
Customer Approval: \_\_\_\_\_  
Equipment: \_\_\_\_\_  
Material: \_\_\_\_\_



INTERMOUNTAIN POWER SERVICE CORP.  
Delta, Utah 84624-9546 (435) 864-4414 - Purchasing FAX (435) 864-8678

VENDOR: TEI CONSTRUCTION SERVICES INC.  
7870 SCHILLINGER PARK WEST  
MOBILE, AL 36608

# PURCHASE ORDER

25 FEB 2004

DENCE, AND ON PACKING LISTS IN EACH CONTAINER, TO INSURE PROMPT PAYMENT.  
CHARGES FOR TRANSPORTATION MUST BE SUPPORTED BY COPY OF FREIGHT BILL.

PURCHASE ORDER NO.	VENDOR CODE	REQUISITION NO
04-45618-003	8149	200474

\*\*\* SHIP TO \*\*\*  
INTERMOUNTAIN POWER SERVICE CORPORATION  
850 W. BRUSH WELLMAN RD.  
DELTA, UT 84624-9546

251-633-4181 OR 864-879-6860

CONFIRMING DO ST DUPLICATE	NON CONFIRMING X	SHIP VIA VENDOR TRUCK	TERMS AS INVOICED	FOB POINT DESTINATION F/A	PAGE OF 1 1	FAX
-------------------------------	---------------------	--------------------------	----------------------	------------------------------	----------------	-----

INTERMOUNTAIN POWER SERVICE CORPORATION'S STANDARD TERMS AND CONDITIONS ARE INCLUDED AS PART OF THIS AGREEMENT

QUANTITY ORDERED	U M	IPSC PART NO.	DESCRIPTION	ACCOUNT NUMBER	UNIT PRICE	EXTENSION
1	EA		<p>LINE 1 REMOVAL OF OLD SEAL RINGS AND INSTALLATION OF REPLACEMENT RINGS</p> <p>RELEASE # 3 AGAINST SERVICE CONTRACT # S45618 PURCHASE PRIORITY #4 APPRD BY G CROSS</p> <p>*** SERVICE CONTRACT DESCRIPTION *** INSTALLATION OF LOW NOX BURNERS, ANCILLARY HARDWARE, &amp; ASSOCIATED FLAME DETECTION SYSTEMS IN UNIT 2</p> <p>***** * THIS IS A NON-CONFIRMING PURCHASE ORDER * * PLEASE SHIP PER THIS ORDER ONLY * *****</p> <p>DATE REQUIRED 02/26/04</p>	2SGX-402 03-96033-20	3,232.00	3,232.00
					TOTAL COST	3,232.00

Invoices and correspondence may be mailed to Intermountain Power Service Corporation, 850 West Brush Wellman Rd., Delta, Utah, 84624-9546.

Acknowledgement is required if shipment will not be made within FIVE days.

Mark packages or items with IPSC part number and/or P.O. Line number.  
Show number on invoice and packing slip.

Vendor must furnish appropriate material safety data sheets.

Add to invoice all applicable federal taxes.

UTAH VENDORS ARE TO ADD TO THE INVOICE  
ALL APPLICABLE STATE, AND COUNTY TAXES.

OUT OF STATE VENDORS, LICENSED TO  
COLLECT UTAH TAXES, ARE TO ADD TAX OF 6%.

UTAH TAXES WILL ACCRUED BY IPSC FOR  
OUT OF STATE VENDORS NOT LICENSED TO

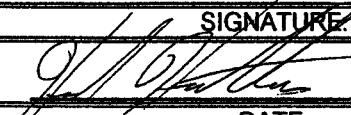
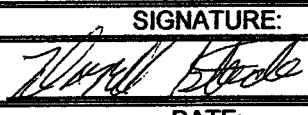
NANCY BENNETT 435-864-4414

REVIEWED BY JOHN BARNES

IP7\_027884

Closed out <sup>needs</sup> signature

**SUB NO 021**      **TEI CONSTRUCTION SERVICES, INC.**  
**PURCHASE ORDER CHANGE REQUEST**      04-45618-006

T E I  P O R T I O N	PROJECT: BURNER REPLACEMENT		DATE: 02/20/04	
	FCO #: 014		PROJECT #: 80960	
	CUSTOMER: IPSC		P.O. #:	
	REASON FOR CHANGE: IPSC REQUEST			
	DESCRIPTION OF CHANGE:  TO SEAL AIR FLOW ON 4 AREAS OF NEW ABT BURNERS 48 - 3" HOLE PENETRATIONS 96 - 4" HOLE PENETRATIONS			
	PEOPLE CONTACTED AND METHODS TAKEN TO RESOLVE PROBLEM: IPSC - HOWARD HAMILTON 1 - RECEIVE, FABRICATE & INSTALL 1/4" SEAL PLATES AT T & M RATES			
	("X" APPROPRIATE BOX)			
	FIRM PRICE:	TIME & MATERIAL:	NOT TO EXCEED:	X
	TEI SIGNATURE:		LABOR: \$ 4,848.48	
	DATE:		MATERIALS: \$ 305.00	
RECEIVED BY:		OTHER: \$		
DATE:		TOTAL: \$ 5,153.48		
C U S T O M E R	EXISTING APPROVED PURCHASE ORDER:		\$	
	THIS FCO:		\$	
	OTHER APPROVED FCO'S:		\$	
	NEW PURCHASE ORDER:		\$	
	BY SIGNATURE BELOW, TEI IS AUTHORIZED TO PROCEED ON ABOVE REFERENCED CHANGE, TO THE ORIGINAL CONTRACT AT THE SUBMITTED PRICE AND CONDITIONS.			
A P P R O V A L	CUSTOMER COORDINATOR APPROVAL:		PROJECT MANAGEMENT APPROVAL:	
	SIGNATURE:		SIGNATURE:	
				
	DATE:		DATE:	
	3/2/04		3-2-04	

**TEI Construction Services, Inc.  
T&M Billing Cost Summary**

PROJECT:  
Client: Intermountain Power Plant  
Progress Energy PO#:

TEI PROJECT: 80960  
TEI FCO#: EWO-014

LABOR		
Week Ending	Hours	Amount
	138	\$5,084.30

Totals 138 \$5,084.30

TOTAL LABOR \$5,084.30

SMALL TOOLS & CONSUMABLES		
Hours	Cost Per Hour	Amount
138	\$3.75	\$517.50

TOTAL SMALL TOOLS & CONSUMABLES \$517.50

MATERIAL			
Vendor	PO#	Invoice #	Amount
	703383	UW 02623156	450.76
		Sub Total	<del>450.76</del> 450.76
		10% Mark-Up	<del>45.08</del> 45.76
Total Material			495.84

SUBCONTRACTORS			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Subcontractors			\$0.00

RENTAL EQUIPMENT			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Rental Equipment			\$0.00

Description	Rental Period	Amount
Total TEI Rental Equipment		\$0.00

TOTAL BILLING ~~\$5,084.30~~  
6097.64

IP7\_027886

**TEI Construction Services, Inc.**  
**T&M Billing Weekly Labor**

PROJECT 80960  
CLIENT INTERMOUNTAIN POWER PLANT  
TEI NO.  
ORDER NO.  
EWO NO. 014

CRAFT CLASS	ST HOURS	@	TOTALS	OT HOURS	@	TOTALS
Superintendent		\$66.88	\$0.00		\$93.67	\$0.00
General Foreman		\$46.65	\$0.00		\$67.32	\$0.00
Foreman		\$43.59	\$0.00		\$62.72	\$0.00
Cert Welder		\$33.67	\$0.00		\$50.51	\$0.00
Mechanic	112	\$33.67	\$3,771.04	26	\$50.51	\$1,313.26
Apprentice		\$27.55	\$0.00		\$41.33	\$0.00
Helper		\$24.49	\$0.00		\$36.74	\$0.00
Laborer		\$18.37	\$0.00		\$27.55	\$0.00
Field Clerk		\$42.06	\$0.00		\$60.43	\$0.00
<b>TOTALS</b>	<b>112</b>		<b>\$3,771.04</b>	<b>26</b>		<b>\$1,313.26</b>

**TOTAL BILLING** **\$5,084.30**

**IP7\_027887**









SHIFT:

### DESCRIPTION OF WORK PERFORMED

## Seal Rings

EXTRA

<<< JOB NUMBERS >>>

014

**TOTALS**

[illegible]

**TEI Approval:**

**Equipment:**

Customer Approval:

**Material;**

**IP7\_027891**

44



INTERMOUNTAIN POWER SERVICE CORP.  
Delta, Utah 84624-9546 (435) 864-4414 - Purchasing FAX (435) 864-8678

VENDOR: TEI CONSTRUCTION SERVICES INC.  
7870 SCHILLINGER PARK WEST  
MOBILE, AL 36608

# PURCHASE ORDER

26 FEB 2004

DENCE, AND ON PACKING LISTS IN EACH CONTAINER, TO INSURE PROMPT PAYMENT.  
CHARGES FOR TRANSPORTATION MUST BE SUPPORTED BY COPY OF FREIGHT BILL.

PURCHASE ORDER NO.	VENDOR CODE	REQUISITION NO
04-45618-006	8149	200520

\* \* \* S H I P T O \* \* \*  
INTERMOUNTAIN POWER SERVICE CORPORATION  
850 W. BRUSH WELLMAN RD.  
DELTA , UT 84624-9546

251-633-4181 OR 864-879-6860

CONFIRMING DO OT DUPLICATE	NON CONFIRMING X	SHIP VIA VENDOR TRUCK	TERMS AS INVOICED	FOB POINT DESTINATION F/A	PAGE OF 1 1	FAX
-------------------------------	---------------------	--------------------------	----------------------	------------------------------	----------------	-----

INTERMOUNTAIN POWER SERVICE CORPORATION'S STANDARD TERMS AND CONDITIONS ARE INCLUDED AS PART OF THIS AGREEMENT

QUANTITY ORDERED	U M	IPSC PART NO.	DESCRIPTION	ACCOUNT NUMBER	UNIT PRICE	EXTENSION
1	EA		<p>LINE 1</p> <p>MATERIAL, FABRICATION, &amp; WELDING OF DONUTS, THREE (3) PER BURNER REQUIRED FOR A TOTAL OF ONE-HUNDRED FORTY-FOUR (144)</p> <p>RELEASE # 6 AGAINST SERVICE CONTRACT # S45618 PURCHASE PRIORITY #4 APPRD BY G CROSS</p> <p>*** SERVICE CONTRACT DESCRIPTION *** INSTALLATION OF LOW NOX BURNERS, ANCILLARY HARDWARE, &amp; ASSOCIATED FLAME DETECTION SYSTEMS IN UNIT 2</p> <p>*****ATTENTION IPSC WAREHOUSE***** PLEASE RECEIVE. PO IS FOR SERVICES, FEES, DUES, PREMIUMS, TUITION, AND MISCELLANEOUS CHARGES. NO MATERIAL WILL BE RECEIVED.</p> <p>DATE REQUIRED 02/26/04</p>	2SGX-402 03-96033-21	5,153.00	5,153.00
					TOTAL COST	5,153.00

Invoices and correspondence may be mailed to Intermountain Power Service Corporation, 850 West Brush Wellman Rd., Delta, Utah, 84624-9546.

Acknowledgement is required if shipment will not be made within FIVE days.

1. Mark packages or items with IPSC part number and/or P.O. Line number.  
Show number on invoice and packing slip.

1 Vendor must furnish reliable material safety data sheets.

UTAH VENDORS ARE TO ADD TO THE INVOICE  
ALL APPLICABLE STATE, AND COUNTY TAXES.

OUT OF STATE VENDORS, LICENSED TO  
COLLECT UTAH TAXES, ARE TO ADD TAX OF 6%.

UTAH TAXES 1 ARE ACCRUED BY IPSC FOR  
OUT OF STATE VENDORS NOT LICENSED TO

NANCY BENNETT 435-864-4414

REVIEWED BY JOHN BARNES

IP7\_027892



Steel Service Centers, Inc.



# SHIPPING STATEMENT

1100 N. 300 W. - P.O. BOX 280 - SPANISH FORK, UT 84440  
(801) 798-8676 OR (800) 444-PDM1 FAX (801) 798-3605

Order No. 41-43634

Page

Sold To TEI CONSTRUCTION  
350 S BROOKSHIRE ROAD  
GREER SC 29651

Ship To INTERMOUNTAIN POWER SERVICE  
IPP PLANT  
DELTA UT 84624

No. 703383 Phone (864) 879-4800

Ship No. 703383 Phone (864) 879-4800

Date Ordered	2/20/04	Date Shipped	Ordered By	Ship D	Inside	Rte	Rel. Delivery	Instructions
Wanted	2/20/04		960166	Via	Salesman		MRS 7 AM TO 5 PM	
Earliest			STEVE	OT D M.	GREER		MCR 40' MAX LENGTH	
				OUR TRUCK				

Ln	Number	Description	Order Quantity	Ship Quantity	Weight (LB)	Unit Price	Unit	Extended Price
1	1720810	1/4 HR PLATE 48 X 96	2 EA		653.440	162.71	EA	325.42
	10W	A36*BLUE*						
2	9261000	FREIGHT & HANDLE COMM. CARRIER	1 EA			105.00	EA	105.00
		**						
Total					653.440			430.42
						Tax		20.31
						Order Total		450.73

Order

*uw* 2/20/04 (2)

Received By

*S.P.*

Date

Printed 14.13.17 02/20/04 By MCREER

Steel Service - when and where you need it!

Please See Reverse Side  
for Conditions of Sale

IP7\_027893



U W FREIGHT LINE, INC.  
2818 WEST PARKWAY BLVD.  
SALT LAKE CITY, UTAH 84119  
TELEPHONE (801) 900-3400

CONSIGNEE  
COPY

SHIP. NUMBER	DATE	CITY	INTERLINE PAYABLE	U W REVENUE	ANT. ONE U W	DESTINATION	REFER TO THIS NUMBER	
	02/22/2004	TP 09				11	INVOICE NUMBER	
CONSIGNEE			SHIPPER NUMBER		CL PRO & DATE			
TEI @ IPP POWER PLANT			NS		/ /			
NS			PRO NUMBER		02623156			
DELTA UT 84624			PO/NS		 0 2 6 2 3 1 5 6			
SHIPPER				BILL TO				
PDM STEEL SERVICE CNTR				PDM STEEL SERVICE CNTR				
300 WEST 1100 NORTH				300 WEST 1100 NORTH				
P O BOX 280				P O BOX 280				
SPANISH FORK, UT 84660				SPANISH FORK, UT 84660				
NO. PCS.	HM	DESCRIPTION OF ARTICLES AND MARKS			WEIGHT (LBS.)	RATE	TOTAL CHARGES	
2		1/4 HR PLATES 48x96			C 50	653		
		DISC 35			C			
		FS			C			
2		TOTAL			TOTAL	653		
							PREPAID	

\*\* THANK YOU. We at U W FREIGHT LINE appreciate your business \*\*  
 LEAVE THIS COPY WITH CONSIGNEE

**SUB WO# 022**

**TEI CONSTRUCTION SERVICES, INC.  
PURCHASE ORDER CHANGE REQUEST**

04-45618-007

T E I  P O R T I O N	PROJECT: MODIFY PACKING GLAND		DATE:	
	FCO #: 015		PROJECT #: 80960	
	CUSTOMER: IPSC		P.O. #:	
	REASON FOR CHANGE: IPSC REQUEST			
	DESCRIPTION OF CHANGE:  MODIFY NEW BURNER TO RECEIVE SCANNERS			
	PEOPLE CONTACTED AND METHODS TAKEN TO RESOLVE PROBLEM: IPSC - HOWARD HAMILTON 1 - DRILL HOLES 2 - TAP HOLES & INSTALL BOLTS			
	("X" APPROPRIATE BOX)			
	FIRM PRICE:	TIME & MATERIAL:	X	NOT TO EXCEED:
	TEI SIGNATURE:		LABOR: \$ 8,956.96	
	DATE:		MATERIALS: \$ 400.00	
RECEIVED BY:		OTHER: \$		
DATE:		TOTAL: \$ 9,356.96		
C U S T O M E R	EXISTING APPROVED PURCHASE ORDER:		\$	
	THIS FCO:		\$	
	OTHER APPROVED FCO'S:		\$	
	NEW PURCHASE ORDER:		\$	
BY SIGNATURE BELOW, TEI IS AUTHORIZED TO PROCEED ON ABOVE REFERENCED CHANGE, TO THE ORIGINAL CONTRACT AT THE SUBMITTED PRICE AND CONDITIONS.				
A P P R O V A L	CUSTOMER COORDINATOR APPROVAL:		PROJECT MANAGEMENT APPROVAL:	
	SIGNATURE:		SIGNATURE:	
	DATE:		DATE:	
	3/2/04		3-2-04	

IP7\_027895



**TEI Construction Services, Inc.  
T&M Billing Cost Summary**

PROJECT:  
Client: Intermountain Power Plant  
Progress Energy PO#:

TEI PROJECT: 80960  
TEI FCO#: EWO-015

LABOR		
Week Ending	Hours	Amount
	99	\$3,720.65

Totals 99 \$3,720.65

TOTAL LABOR \$3,720.65

SMALL TOOLS & CONSUMABLES		
Hours	Cost Per Hour	Amount
99	\$3.75	\$371.25

TOTAL SMALL TOOLS & CONSUMABLES \$371.25

MATERIAL			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Material			\$0.00

SUBCONTRACTORS			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Subcontractors			\$0.00

RENTAL EQUIPMENT			
Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
Total Rental Equipment			\$0.00

Description	Rental Period	Amount
Total TEI Rental Equipment		\$0.00

TOTAL BILLING \$4,091.90

IP7\_027896

**TEI Construction Services, Inc.**  
**T&M Billing Weekly Labor**

PROJECT 80960  
CLIENT INTERMOUNTAIN POWER PLANT  
TEI NO.  
ORDER NO.  
EWO NO. 015

CRAFT CLASS	ST HOURS	@	TOTALS	OT HOURS	@	TOTALS
Superintendent		\$66.88	\$0.00		\$93.67	\$0.00
General Foreman		\$46.65	\$0.00		\$67.32	\$0.00
Foreman		\$43.59	\$0.00		\$62.72	\$0.00
Cert Welder	76	\$33.67	\$2,558.92	23	\$50.51	\$1,161.73
Mechanic		\$33.67	\$0.00		\$50.51	\$0.00
Apprentice		\$27.55	\$0.00		\$41.33	\$0.00
Helper		\$24.49	\$0.00		\$36.74	\$0.00
Laborer		\$18.37	\$0.00		\$27.55	\$0.00
Field Clerk		\$42.06	\$0.00		\$60.43	\$0.00
TOTALS	76		\$2,558.92	23		\$1,161.73

**TOTAL BILLING** **\$3,720.65**

**IP7\_027897**

**HIFT:**

I &amp; VI (MCSHEET)

DESCRIPTION OF WORK PERFORMED

[illegible]

**Equipment:**

**Material:**

El Approval:

Customer Approval: \_\_\_\_\_

**IP7\_027898**

$$2\frac{1}{2}$$

LIFT: *12/5*  
T & M TIMESHEET

### DESCRIPTION OF WORK PERFORMED

Modify  
Packing  
Gland

<<< JOB NUMBERS >>>

015

[illegible]

El Approval: \_\_\_\_\_

Customer Approval:

**Equipment:**

**Material:**

**IP7\_027899**

37



**SHIFT: 1**

**DESCRIPTION OF WORK PERFORMED**[illegible]

**Equipment:**

**Material:**

TEI Approval: \_\_\_\_\_

**Customer Approval:**

**IP7\_027901**

**IP7\_027902**



INTERMOUNTAIN POWER SERVICE CORP.  
Delta, Utah 84624-9546 (435) 864-4414 - Purchasing FAX (435) 864-6878

VENDOR: TEI CONSTRUCTION SERVICES INC.  
7870 SCHILLINGER PARK WEST  
MOBILE, AL 36608

# PURCHASE ORDER

01 MAR 2004

VENDOR MUST SHOW P.O. NUMBER ON ALL INVOICES, BILL OF LADING, CORRESPONDENCE, AND ON PACKING LISTS IN EACH CONTAINER, TO INSURE PROMPT PAYMENT. CHARGES FOR TRANSPORTATION MUST BE SUPPORTED BY COPY OF FREIGHT BILL

PURCHASE ORDER NO.	VENDOR CODE	REQUISITION NO
04-45618-007	8149	200606

\*\*\* SHIP TO \*\*\*  
INTERMOUNTAIN POWER SERVICE CORPORATION  
850 W. BRUSH WELLMAN RD.  
DELTA, UT 84624-9546

251-633-4181 OR 864-879-6860

CONFIRMING DO NOT DUPLICATE	NON CONFIRMING X	SHIP VIA VENDOR TRUCK	TERMS AS INVOICED	FOB POINT DESTINATION F/A	PAGE OF 1 1	FAX
-----------------------------	------------------	--------------------------	----------------------	------------------------------	-------------------	-----

INTERMOUNTAIN POWER SERVICE CORPORATION'S STANDARD TERMS AND CONDITIONS ARE INCLUDED AS PART OF THIS AGREEMENT

QUANTITY ORDERED	U M	IPSC PART NO.	DESCRIPTION	ACCOUNT NUMBER	UNIT PRICE	EXTENSION
1	EA		LINE 1 TEI TO MODIFY PACKING GLAND TO ABB SCANNERS TO MAKE THEM WORK. THIS IS TEI FCO #15  RELEASE # 7 AGAINST SERVICE CONTRACT # S45618 PURCHASE PRIORITY #4 APPRD BY G CROSS  *** SERVICE CONTRACT DESCRIPTION *** INSTALLATION OF LOW NOX BURNERS, ANCILLARY HARDWARE, & ASSOCIATED FLAME DETECTION SYSTEMS IN UNIT 2  *****ATTENTION IPSC WAREHOUSE***** PLEASE RECEIVE. PO IS FOR SERVICES, FEES, DUES, PREMIUMS, TUITION, AND MISCELLANEOUS CHARGES. NO MATERIAL WILL BE RECEIVED.  DATE REQUIRED 02/27/04	2SGX-402 03-96033-22	9,356.00	9,356.00
TOTAL COST						9,356.00

Invoices and correspondence may be mailed to Intermountain Power Service Corporation, 850 West Brush Wellman Rd., Delta, Utah, 84624-9546.

Acknowledgement is required if shipment will not be made within FIVE days.

Mark packages or items with IPSC part number and/or P.O. Line number.  
Show number on invoice and packing slip.

Vendor must furnish applicable material safety data sheets.

Add to invoice all applicable federal taxes.

UTAH VENDORS ARE TO ADD TO THE INVOICE  
ALL APPLICABLE STATE, AND COUNTY TAXES.

OUT OF STATE VENDORS, LICENSED TO  
COLLECT UTAH TAXES, ARE TO ADD TAX OF 6%

UTAH TAXES WILL BE ACCRUED BY IPSC FOR  
OUT OF STATE VENDORS NOT LICENSED TO  
COLLECT UTAH TAXES

NANCY BENNETT 435-864-4414

REVIEWED BY NANCY BENNETT

IP7\_027903





**TEI CONSTRUCTION SERVICES, INC.**

550-B Brookshire Rd  
Greer, SC 29651  
Phone: 864-879-4800  
Fax: 864-879-3530

PAGE 1 OF 1  
DATE 03/18/04  
BUYER ShannonE  
SHIP VIA COMPANY TRUCK  
F.O.B. DESTINATION  
TERMS NET 30

VENDOR  
107823  
INDUSTRIAL SUPPLY  
1635 SOUTH 300 WEST  
SALT LAKE CITY UT 84115  
USA

SHIP TO  
103  
TEI CONSTRUCTION SERVICES  
C/O INTERMOUNTAIN POWER  
850 WEST BRUSH WELLMAN ROAD  
DELTA UT 84624-9546  
USA  
TINKER STEEDE  
251-633-4181

FAX: 801-487-0469

PLEASE ACCEPT OUR ORDER AND FURNISH THE FOLLOWING, SUBJECT TO CONDITIONS BELOW,  
ON THE REVERSE SIDE OF THIS P/O.

REMIT TO:  
INDUSTRIAL SUPPLY  
P.O. BOX 30600  
SALT LAKE CITY UT 84130  
USA

OUR ORDER NUMBER MUST APPEAR  
ON INVOICE, B/L BUNDLES, CASES,  
PACKING LIST AND CORRESPONDENCE

PURCHASE ORDER Ewo-015

PROJECT NO. 80960

ACCOUNT NO.

☐ FAX SENT PRIOR DO NOT DUPLICATE ☐ VERBAL PLACED PRIOR DO NOT DUPLICATE

LINE/REL	QTY. ORDERED	QTY. DUE	ITEM DESCRIPTION	DUE DATE	UNIT PRICE / EXT. PRICE
1	1.000	1.000	MISC SUPPLIES		280.64000
			LS	03/10/04	280.64
			ORDER# 1390026-0001-01		
			Ewo-015		

SELLER TO ACKNOWLEDGE THIS ORDER BY SIGNING AND RETURNING  
TO THE ADDRESS ABOVE-ATTEN: A/P DEPT (FAX 864-879-6448)

DATE

Total:

USD280.64

US DOLLARS

S. E. O. O. O. 03-18-04

*[Signature]*

IP7\_027904

**PURCHASE / MATERIAL REQUISITION**

Page \_\_\_\_ Of \_\_\_\_

[illegible]

Tom Goble

**Authorized Signature**

**IP7\_027905**

# INDUSTRIAL SUPPLY

Packing  
Slip

INDUSTRIAL SUPPLY  
P.O. Box 30600 (84130) 1635  
South 300 West  
Salt Lake City, Utah 84115  
Phone (801) 484-8644 FAX  
(801) 487-0469

The real difference between companies is the way  
they treat their customers.

CUSTOMER NUMBER

TEI100

ORDER NUMBER

1390026-0001-01



BILL TO: TEI CONSTRUCTION SERVICES  
550 B BROOKSHIRE RD  
GREER, SC 29651  
864 879-4800

SHIP TO: TEI CONSTRUCTION SERVICES  
850 W. BRUSH WELLMAN RD  
DELTA, UT 84624

SHIP/TR/INVOICE NO	SLMAN	ORDER DATE	TAKER	CUSTOMER P.O. NUMBER	DATE
1390026-0001-01	113	3/10/04	161	960-262	3/10/04
INSTRUCTIONS				ROUTE	PAGE NO
DELIVER TODAY SURE				90	1

ORDERED	QUANTITY BO/RET	SHIPPED	DISP	U/M	ITEM CODE AND DESCRIPTION	UNIT PRICE	AMOUNT
4		4	*	EA	CALL FOR MSDS SHEETS CHEM SPILLS CALL 800-424-9300 UTD 1500T 3/4-10 TAP 4 FLUTE HAND GT/HSS H3 UTD 1010139 1-990231	24.8800	99.52
2		2	*	EA	HRD 1/2-13 DIE HEX RETHREADING CT/CS ACE 7244 NC 1-990226	7.2800	14.56

\*\*SHIP ORDER\*\*\*\*SHIP ORDER\*\*\*\*

\*\*\* ORDER COMPLETED \*\*\*

DISP CODE:

- STATE TAX APPLICABLE B -  
ALANCE BACK ORDERED  
ONSIDER COMPLETE  
IRECT SHIPMENT F -  
ACTORY MINIMUM

PULLER	PACKER	NO. OF PIECES
RECEIVED BY <i>[Signature]</i>		

PRINT NAME

SUB TOTAL 114.08  
MISC. CHARGE 0.00  
FREIGHT TOTAL 160.00 ~~240.00~~  
STATE TAX 0.00  
PAYMENT REC'D 6.56

TOTAL  
280.64

TO INCLUDE ORDER CREDIT PLEASE INCLUDE THIS PACKING SLIP WITH RETURNS.

IP7\_027906



INTERMOUNTAIN POWER SERVICE CORP.  
Delta, Utah 84624-9546 (435) 864-4414 - Purchasing FAX (435) 864-6678

VENDOR: TEI CONSTRUCTION SERVICES INC.  
7870 SCHILLINGER PARK WEST  
MOBILE, AL 36608

# PURCHASE ORDER

01 MAR 2004

VENDOR MUST SHOW P.O. NUMBER ON ALL INVOICES, BILL OF LADING, AND ON PACKING LISTS IN EACH CONTAINER. TO IN-CHARGES FOR TRANSPORTATION MUST BE SUPPORTED BY

PURCHASE ORDER NO.	VENDOR CODE	REQUISITION NO
04-45618-007	8149	200606

\*\*\* SHIP TO \*\*\*  
INTERMOUNTAIN POWER SERVICE CORPORATION  
850 W. BRUSH WELLMAN RD.  
DELTA, UT 84624-9546

251-633-4181 OR 864-879-6860

CONFIRMING DO NOT DUPLICATE	NON CONFIRMING X	SHIP VIA VENDOR TRUCK	TERMS AS INVOICED	FOB POINT DESTINATION F/A	PAGE OF 1 1	FAX
-----------------------------	------------------	--------------------------	----------------------	------------------------------	-------------------	-----

INTERMOUNTAIN POWER SERVICE CORPORATION'S STANDARD TERMS AND CONDITIONS ARE INCLUDED AS PART OF THIS AGREEMENT

QUANTITY ORDERED	U M	IPSC PART NO	DESCRIPTION	ACCOUNT NUMBER	UNIT PRICE	EXTENSION
1	EA		LINE 1 TEI TO MODIFY PACKING GLAND TO ABB SCANNERS TO MAKE THEM WORK. THIS IS TEI FCO #15  RELEASE # 7 AGAINST SERVICE CONTRACT # S45618 PURCHASE PRIORITY #4 APPRD BY G CROSS  *** SERVICE CONTRACT DESCRIPTION *** INSTALLATION OF LOW NOX BURNERS, ANCILLARY HARDWARE, & ASSOCIATED FLAME DETECTION SYSTEMS IN UNIT 2  ****ATTENTION IPSC WAREHOUSE**** PLEASE RECEIVE. PO IS FOR SERVICES, FEES, DUES, PREMIUMS, TUITION, AND MISCELLANEOUS CHARGES. NO MATERIAL WILL BE RECEIVED.  DATE REQUIRED 02/27/04	2SGX-402 03-96033-22	9,356.00	9,356.00
TOTAL COST						9,356.00

1 Invoices and correspondence may be mailed to Intermountain Power Service Corporation, 850 West Brush Wellman Rd, Delta, Utah, 84624-9546.

2 Acknowledgement is required if shipment will not be made within FIVE days.

3. Mark packages or items with IPSC part number and/or P.O. Line number. Show number on invoice and packing slip.

4 Vendor must furnish applicable material safety data sheets.

5 Add to invoice all applicable federal taxes.

UTAH VENDORS ARE TO ADD TO THE INVOICE ALL APPLICABLE STATE, AND COUNTY TAXES

OUT OF STATE VENDORS, LICENSED TO COLLECT UTAH TAXES, ARE TO ADD TAX OF 6%

UTAH TAXES WILL BE ACCRUED BY IPSC FOR OUT OF STATE VENDORS NOT LICENSED TO COLLECT UTAH STATE TAX

NANCY BENNETT 435-864-4414

REVIEWED BY NANCY BENNETT

IP7\_027907

Jerry,

You received the entire assembly which typically connects to a three inch female coupling. Since you have a threaded pipe already installed there can be only a few options. Your picture Scanner Packing Gland2 is the correct orientation. One option would be to modify the existing pipe and drill holes for the positioning bolts and place the gland cap and packing on the existing pipe. The other option would be to cut the pipe back on the burner and re-thread and provide a female coupling. The bolts in the packing gland are need to keep the pipe centered and lock it down the packing gland cap and packing material is required to seal the assembly.

If you need any additional assistance please contact me at the following:

Regards,

William M. Clark  
ABB Inc.  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: william.m.clark@us.abb.com

Message from 'Jerry Finlinson' <Jerry-F@ipsc.com> received on 02/23/2004 06:37 PM

02/23/2004 06:37 PM

"Jerry Finlinson" <Jerry-F@ipsc.com>

Internal

Sent by 'Jerry Finlinson' <Jerry-F@ipsc.com>

To: <sal@advancedburner.com>, Harry Dohalick/USINY/ABB@ABB\_US01, James M. Clark/USIMS/ABB@ABB\_US01, William M. Clark/USPOA/ABB@ABB\_US01

cc: "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Jon Chrstensen" <JON-C@ipsc.com>

Subject: Flame scanner packing gland installation difficulties

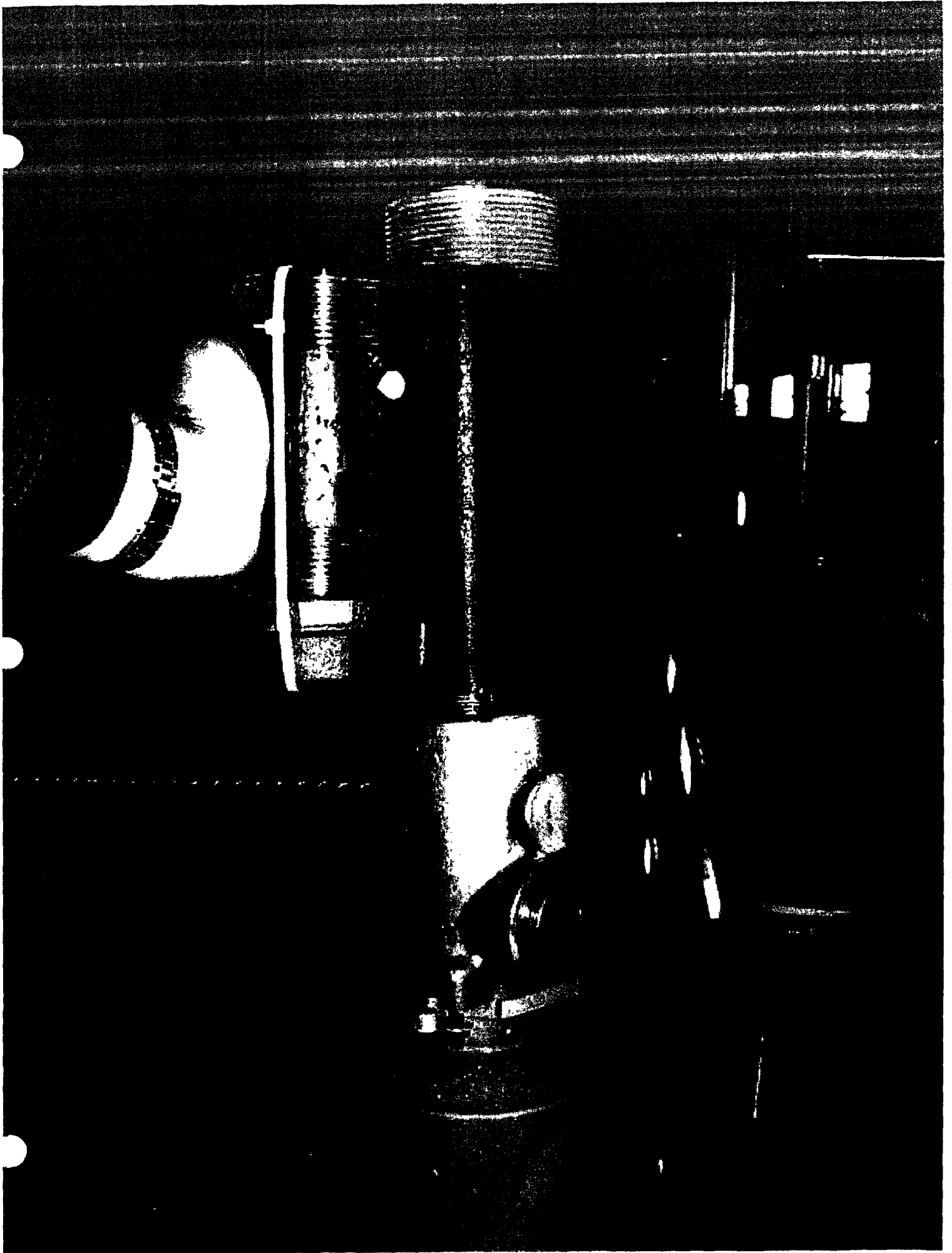
FYI,

I found the flame scanner tube packing glands and tried installing one  
I can't tell which way they are supposed to install. They appear to be missing a connector or something. If there is a coupler in there then the scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624



IP7\_027909

**From:** Jerry Finlinson  
**To:** Harry Dohalick; James Clark; william.m.clark@us.abb.com  
**Date:** 2/25/2004 4:32:17 PM  
**Subject:** Re: Flame scanner packing gland installation sample

Bill,

We have modified a flame scanner packing gland pipe as shown in the attached photo.  
Please examine and give your approval. We think we'll change it by moving the positioning bolts farther from the burner, closer to the packing gland, so they won't interfere with insulation. There are about 3.5 threads on the bolt. That should be sufficient. TEI estimates that it will take 30 to 60 minutes per burner to make these modifications.

Give your approval to go ahead like this.  
They'd like to start this work Thursday morning.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/23/2004 9:43:52 PM >>>

Jerry,

You received the entire assembly which typically connects to a three inch female coupling. Since you have a threaded pipe already installed there can be only a few options. Your picture Scanner Packing Gland2 is the correct orientation. One option would be to modify the existing pipe and drill holes for the positioning bolts and place the gland cap and packing on the existing pipe. The other option would be to cut the pipe back on the burner and re-thread and provide a female coupling. The bolts in the packing gland are need to keep the pipe centered and lock it down the packing gland cap and packing material is required to seal the assembly.

If you need any additional assistance please contact me at the following:

Regards,

William M. Clark  
ABB Inc.  
2 Waterside Crossing

IP7\_027910

Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/23/2004  
06:37 PM

02/23/2004 06:37 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: <[sal@advancedburner.com](mailto:sal@advancedburner.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01, James M.  
Clark/USIMS/ABB@ABB\_US01, William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "James Nelson"  
<[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>,  
"Jon Christensen" <[JON-C@ipsc.com](mailto:JON-C@ipsc.com)>  
Subject: Flame scanner packing gland installation  
difficulties

FYI,  
I found the flame scanner tube packing glands and tried installing  
one.  
I can't tell which way they are supposed to install. They appear to be  
missing  
a connector or something. If there is a coupler in there then the  
scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

IP7\_027911



**From:** <james.m.niziolek@us.abb.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 3/5/2004 1:19:43 PM  
**Subject:** Re: ABB flame scanner full coupling arrived

Jerry,

This looks good. The 3-4 inches in back of the register plate sounds about right per the drawings. Based on the earlier pictures the scanner tip should be sighted through the center of the hole in the register plate and the slot in the turning vanes.

It is not a big deal but before final tightening of the packing gland and the locking bolts I'd push the scanner guidepipe all the way forward into the packing gland. In the picture it looks like it's back 1 to 1.5 inches.

Take care

Jim Niziolek

Message from "Jerry Finlinson" <Jerry-F@ipsc.com> received on 03/04/2004 10:33 PM

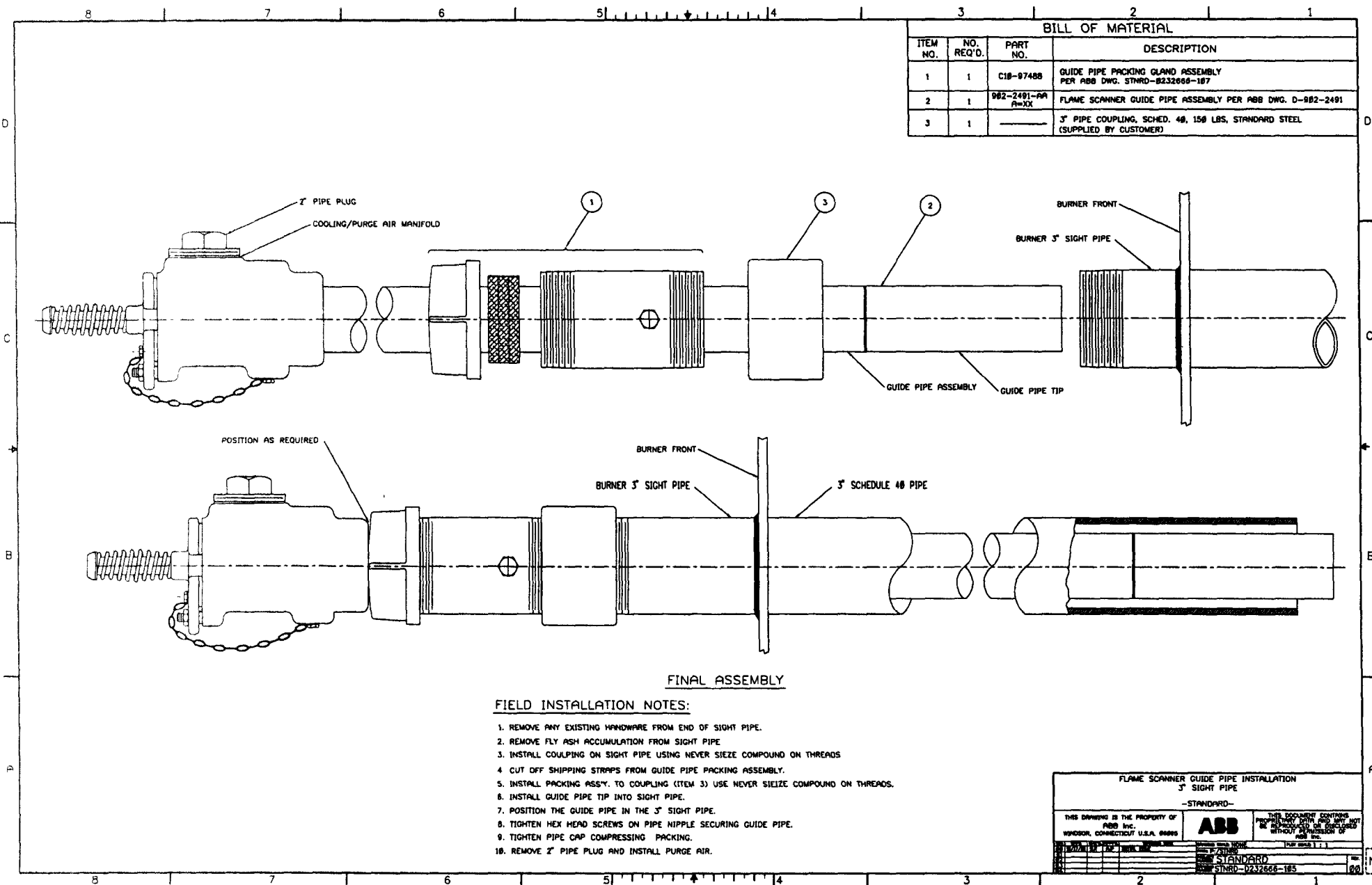
03/04/2004 "Jerry Finlinson" <Jerry-F@ipsc.com>

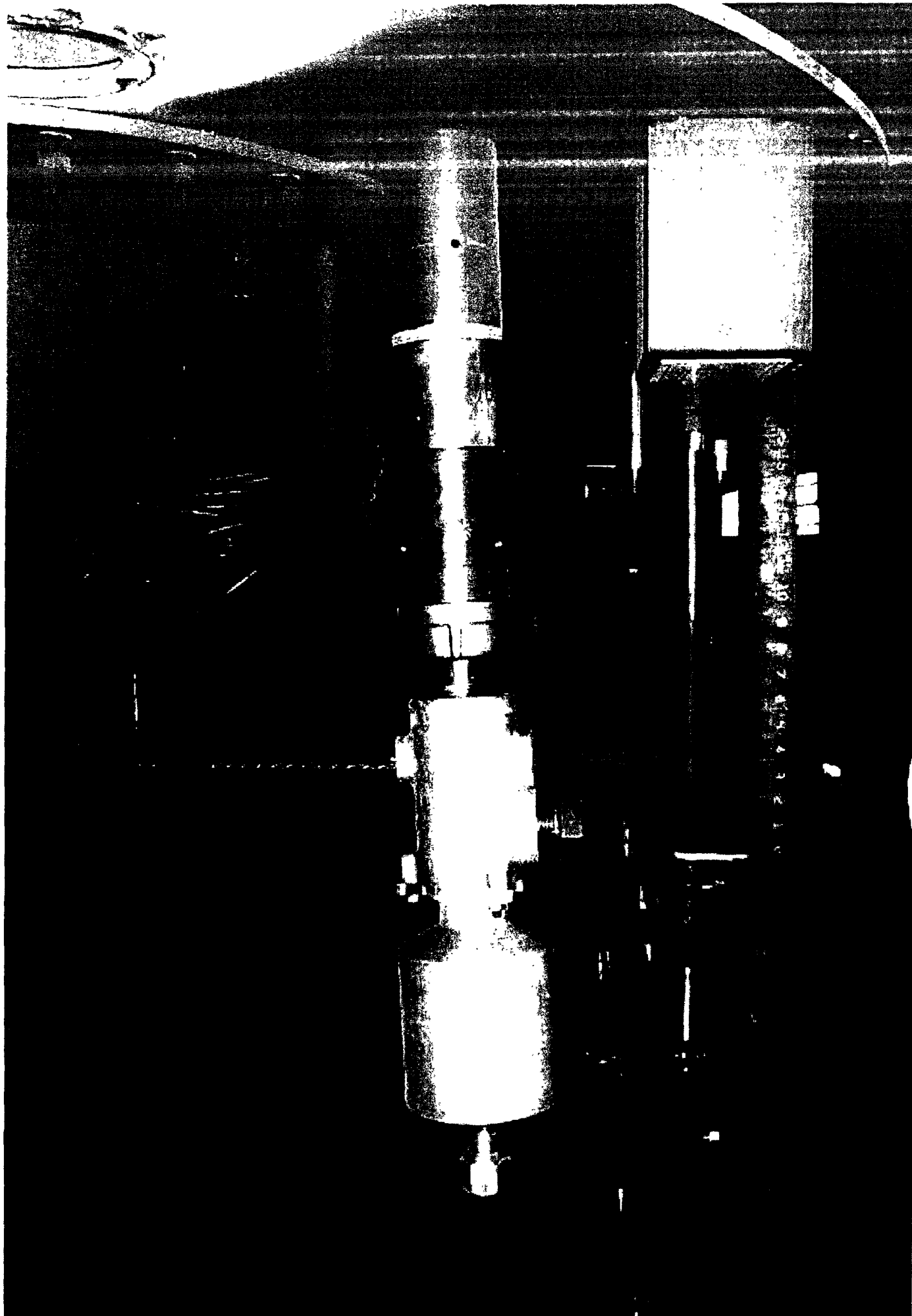
10:33 PM

Sent by "Jerry Finlinson" <Jerry-F@ipsc.com>

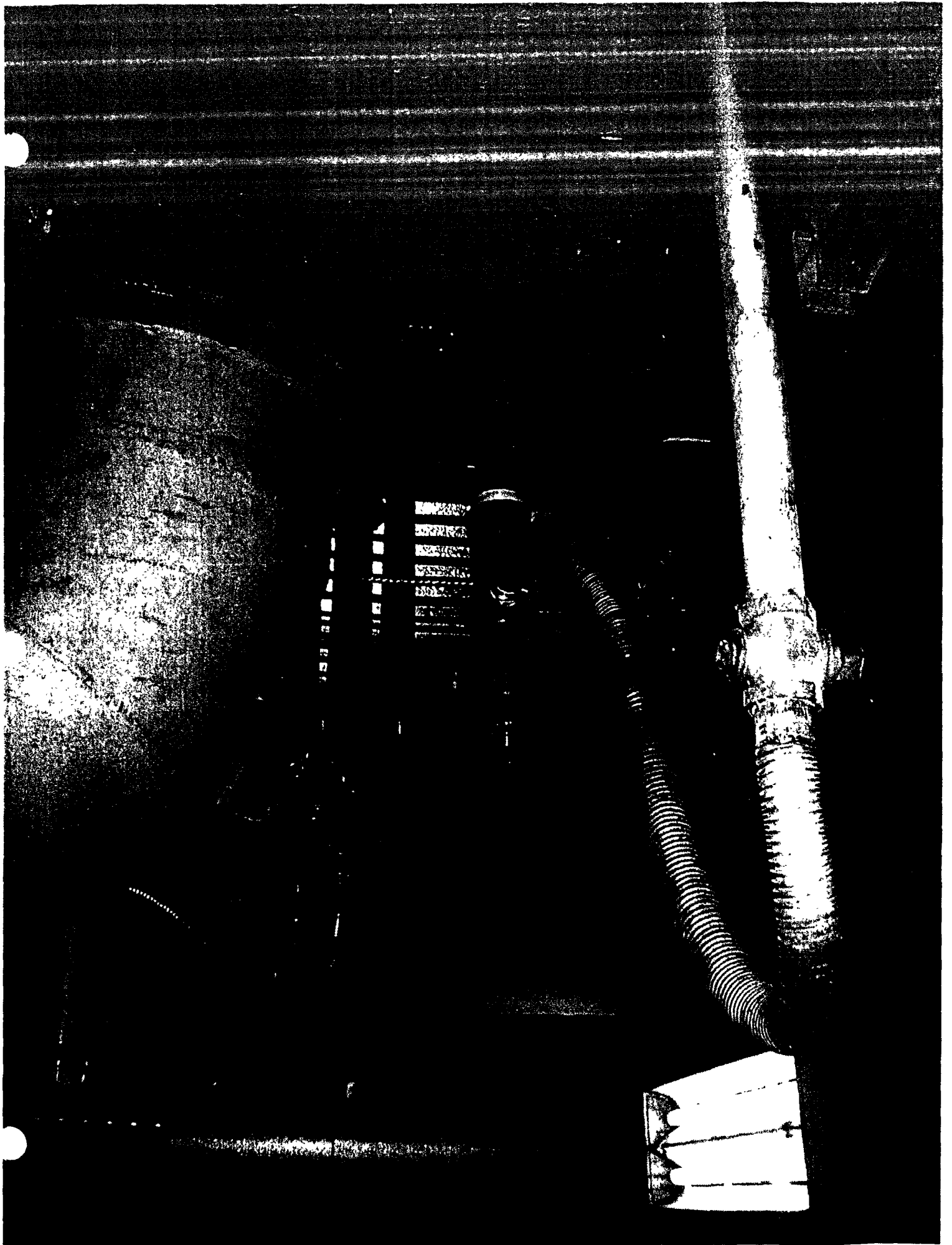
To: James M. Clark/USIMS/ABB@ABB\_US01,  
James M. Niziolek/USSEV/ABB@ABB\_US01,  
<arnold.j.piellucci@ussev.mail.abb.com>

IP7\_027912





IP7\_027914



IP7\_027915

Sub No\*031

TEI CONSTRUCTION SERVICES, INC.  
PURCHASE ORDER CHANGE REQUEST

T E I  P O R T I O N	PROJECT: HFDS MODIFY	DATE: 3-6-04
	FCO #: 028	PROJECT #: 80960
	CUSTOMER: IPSC	P.O. #:
	REASON FOR CHANGE:	
	IPSC REQUEST	
	DESCRIPTION OF CHANGE:	
	REMOVE PORTION OF METAL GUIDE HFD - TRIMMING	
	PEOPLE CONTACTED AND METHODS TAKEN TO RESOLVE PROBLEM:	
	IPSC - HOWARD HAMILTON 1 - CUT AREA OF METAL & PREP ON T & M RATES	
	("X" APPROPRIATE BOX)	
C U S T O M E R  A P P R O V A L	FIRM PRICE:	TIME & MATERIAL: X NOT TO EXCEED:
	TEI SIGNATURE:	LABOR: \$ 3232.32
	DATE:	MATERIALS: \$ 1000.00
	RECEIVED BY:	OTHER: \$
	DATE:	TOTAL: \$ 4232.32
	EXISTING APPROVED PURCHASE ORDER:	\$
	THIS FCO:	\$
	OTHER APPROVED FCO'S:	\$
	NEW PURCHASE ORDER:	\$
	BY SIGNATURE BELOW, TEI IS AUTHORIZED TO PROCEED ON ABOVE REFERENCED CHANGE, TO THE ORIGINAL CONTRACT AT THE SUBMITTED PRICE AND CONDITIONS.	
A P P R O V A L	CUSTOMER COORDINATOR APPROVAL:	PROJECT MANAGEMENT APPROVAL:
	SIGNATURE:	SIGNATURE:
	DATE:	DATE:
	3/6/04	3/6/04

IP7\_027916

PROJECT:  
Client: Intermountain Power Plant  
Progress Energy PO#:

LABOR		
Week Ending	Hours	Amount
	42	\$1,910.08

<b>TOTAL LABOR</b>	<b>\$1,910.08</b>
--------------------	-------------------

Hours	Cost Per Hour	Amount
42	\$3.75	\$157.50

<b>TOTAL SMALL TOOLS &amp; CONSUMABLES</b>	<b>\$157.50</b>
--	-----------------

Vendor	PO#	Invoice #	Amount
		Sub Total	\$0.00
		10% Mark-Up	\$0.00
<b>Total Material</b>			<b>\$0.00</b>

<b>Vendor</b>	<b>PO#</b>	<b>Invoice #</b>	<b>Amount</b>
B & B WELDING	960278	440	342
		Sub Total	\$342.00
		15% Mark-Up	\$51.30
<b>Total Subcontractors</b>			<b>\$393.30</b>

Vendor	PO#	Invoice #	Amount
B & B WELDING	960278	440	\$213.20
		Sub Total	\$213.20
		10% Mark-Up	\$21.32
<b>Total Rental Equipment</b>			<b>\$234.52</b>

<b>Total TEI Rental Equipment</b>	<b>\$0.00</b>
-----------------------------------	---------------

<b>TOTAL BILLING</b>	<b><u>\$2,695.40</u></b>
----------------------	--------------------------

**IP7\_027917**

### T&M Billing Weekly Labor

EWO NO. 028

CRAFT CLASS	ST HOURS	@	TOTALS	OT HOURS	@	TOTALS
Superintendent		\$66.88	\$0.00		\$93.67	\$0.00
General Foreman		\$46.65	\$0.00		\$67.32	\$0.00
Foreman		\$43.59	\$0.00	2	\$62.72	\$125.44
Cert Welder		\$33.67	\$0.00		\$50.51	\$0.00
Mechanic	14	\$33.67	\$471.38	26	\$50.51	\$1,313.26
Apprentice		\$27.55	\$0.00		\$41.33	\$0.00
Helper		\$24.49	\$0.00		\$36.74	\$0.00
Laborer		\$18.37	\$0.00		\$27.55	\$0.00
Field Clerk		\$42.06	\$0.00		\$60.43	\$0.00
<b>TOTALS</b>	<b>14</b>		<b>\$471.38</b>	<b>28</b>		<b>\$1,438.70</b>

**\$1,910.08**

**IP7\_027918**

SHIFT: 1 *D/S*

### DESCRIPTION OF WORK PERFORMED

HFD  
modify  
for  
Insta. for;  
10N

EXTRA  
028

T&amp;M TIMESHEET

<<< JOB NUMBERS >>>

[illegible]

**TEI Approval:**

**Customer Approval**

**Equipment:**

**Material:**

**IP7\_027919**





SHIFT: 1 *12/5*

## T&M TIMESHEET

&lt;&lt;&lt; JOB NUMBERS &gt;&gt;&gt;

### DESCRIPTION OF WORK PERFORMED

[illegible]

**TEI Approval:**

Customer Approval:

**Equipment:**

**Material:**

**IP7\_027921**



550-B Brookshire Rd  
Greer, SC 29651  
Phone: 864-879-4800  
Fax: 864-879-3530

PURCHASE ORDER 900210  
PAGE 1 OF 2  
DATE 03/13/04  
BUYER Shannone

SHIP VIA COMPANY TRUCK  
F.O.B. DESTINATION  
TERMS NET 30

VENDOR  
106353  
B&B WELDER'S SUPPLY  
124 WEST FOURTH STREET  
CRAIG CO 81625  
USA

SHIP TO  
103  
TEI CONSTRUCTION SERVICES  
C/O INTERMOUNTAIN POWER  
850 WEST BRUSH WELLMAN ROAD  
DELTA UT 84624-9546  
USA  
TINKER STEEDE  
251-633-4181

FAX: 970-824-1058

USE ACCEPT OUR ORDER AND FURNISH THE FOLLOWING, SUBJECT TO CONDITIONS BELOW,  
ON THE REVERSE SIDE OF THIS P/O.

OUR ORDER NUMBER MUST APPEAR  
ON INVOICE, B/L BUNDLES, CASES,  
PACKING LIST AND CORRESPONDENCE

PURCHASE ORDER

PROJECT NO. 80960

ACCOUNT NO.

☐ FAX SENT PRIOR DO NOT DUPLICATE ☐ VERBAL PLACED PRIOR DO NOT DUPLICATE

NE/REL	QTY. ORDERED	QTY. DUE	ITEM DESCRIPTION	DUE DATE	UNIT PRICE / EXT. PRICE
1	4.000	4.000	(4) WIRE FEEDERS		175.00000
			EA	03/10/04	700.00
			EWD-028		
			1 WEEK RENTAL		
			175.00-WEEK		
			ORDER# 440		
2	1.000	1.000	PLASMA CUTTER		200.00000
			EA	03/10/04	200.00
			1 WEEK RENTAL		
			200.00-WEEK		
3	1.000	1.000	TAX ON RENTAL		59.40000
			EA	03/10/04	59.40
4	1.000	1.000	FREIGHT		814.09000
			EA	03/10/04	814.09

IP7\_027922



550-B Brookshire Rd  
Greer, SC 29651  
Phone: 864-879-4800  
Fax: 864-879-3530

PURCHASE ORDER 960278

PAGE 2 OF 2

DATE 03/13/04

BUYER ShannonE

SHIP VIA COMPANY TRUCK

F.O.B. DESTINATION

TERMS NET 30

VENDOR  
106353  
B&B WELDER'S SUPPLY  
124 WEST FOURTH STREET  
CRAIG CO 81625  
USA

SHIP TO  
103  
TEI CONSTRUCTION SERVICES  
C/O INTERMOUNTAIN POWER  
850 WEST BRUSH WELLMAN ROAD  
DELTA UT 84624-9546  
USA  
TINKER STEEDE  
251-633-4181

FAX: 970-824-1058

PLEASE ACCEPT OUR ORDER AND FURNISH THE FOLLOWING, SUBJECT TO CONDITIONS BELOW,  
ON THE REVERSE SIDE OF THIS P/O.

OUR ORDER NUMBER MUST APPEAR  
ON INVOICE, B/L BUNDLES, CASES,  
PACKING LIST AND CORRESPONDENCE

PURCHASE ORDER

PROJECT NO. 80962

ACCOUNT NO.

☐ FAX SENT PRIOR  
DO NOT DUPLICATE

☐ VERBAL PLACED PRIOR  
DO NOT DUPLICATE

LINE/REL	QTY. ORDERED	QTY. DUE	ITEM DESCRIPTION	DUE DATE	UNIT PRICE / EXT. PRICE
5	1.000	1.000	MISC PARTS		393.15000
			LS	03/10/04	393.15

SELLER TO ACKNOWLEDGE THIS ORDER BY SIGNING AND RETURNING  
TO THE ADDRESS ABOVE-ATTEN: A/P DEPT (FAX 864-879-6448)

DATE

Total: US DOLLARS

USD 2,166.64

Shannon E. 03-13-04

Donald Steede

IP7\_027923

80960		PO #: 960-278
Contact:		
Phone #:		
Fax #:		
Phone # 435-864-3095		
Fax # 435-864-9033		
Attn: DARRELL STEEDE		
Terms: 30		Ship Via:
	Cost / Unit	Extended Price
	175.00	700.00
	200.00	200.00
	2.25	18.00
	1.93	15.44
	.98	49.00
	8.98	134.70
	9.46	115.92
	14.00	16.00
	19.75	19.75
	814.09	814.09
	59.40	59.40
	24.34	24.34
		2166.64

Date Ordered: 3-10-04		Job #: 80960	PO #: 960-27
Vendor: B & B Welding		Contact:	
106353		Phone #:	
		Fax #:	
Ship To: TEI Construction Services			
Intermountain Power Plant			
850 W. Brush Wellman Rd.			
Delta, Utah 84624			
Requisitioned By: R. Steed		Date Required: 3-11-04	Terms: 30
Ship Via:			

Item#	Qty	Units	Description	Cost / Unit	Extended Price
1	4	EA	(4) Wire Feeders		
			1 week Rental		
			175.00 ea	175.00	700.00
2	1	EA	Plasma Cutter		
			1 week Rental		
			200.00 ea	200.00	200.00
3	8	EA	mig nozzles	2.25	18.00
4	8	EA	mig gun insulators	1.95	15.44
5	50	EA	.052 Tips	.98	49.00
6	15	EA	Plasma Tips	8.98	134.70
7	12	EA	Plasma Electrode	9.46	115.92
8	1	EA	Plasma Shield Cup	16.00	16.00
9	1	EA	Stand off Guide	19.75	19.75
10	1	EA	Freight	814.09	814.09
11	1	EA	Tax on Rental	59.40	59.40
12	1	EA	Tax on Parts	24.34	24.34

Authorized Signature

*[Signature]*

Order # 440

2166.64

IP7\_027925

B & B WELDERS 2002  
124 WEST FOURTH ST  
CRAIG, CO 81625  
USA

Voice: 970-824-1057  
Fax: 970-824-1058

Sold To:  
TEI CONSTRUCTION SERVICES, INC  
550-B BROOKSHIRE ROAD  
GREER, SC 29651

Ship To:

## Sales Order

Sales Order Number:  
440

Sales Order Date:  
Mar 10, 2004

Ship By:  
Mar 10, 2004

Page:  
1

Customer ID	PO Number	Sales Rep Name
TEI		
Customer Contact	Shipping Method	Payment Terms
SABRINA SMITH	CUST PICKUP	Net 30 Days

Quantity	Item	Description	Unit Price	Extension
4.00	RENTAL	WEEKLY RENTAL ON HEFTY WIRE FEEDERS	175.00	700.00
		WITH TWECO GUN FOR .052 WIRE		
1.00	RENTAL	WEEKLY RENTAL ON ESAB PLASMA CUTTER	200.00	200.00
8.00	24A62	MIG NOZZLE	2.25	18.00
8.00	34A	MIG GUN INSULATOR	1.93	15.44
50.00	14H45	.052 CONTACT TIP	0.98	49.00
15.00	MISC PART	PLASMA TIPS	3.98	134.70
12.00	MISC PART	PLASMA ELECTRODE	9.66	115.92
1.00	FREIGHT	UPS FREIGHT	316.00	316.00
1.00	FREIGHT	UPS FREIGHT	66.50	66.50
1.00	FREIGHT	UPS FREIGHT	342.00	342.00
1.00	FREIGHT	UPS FREIGHT	89.59	89.59
1.00	MISC PART	PLASMA SHIELD CUP	16.00	16.00
1.00	MISC PART	STAND OFF GUIDE	19.75	19.75

Tax for Plasma Cutter

13.20 13.20

Plasma Cutter  
Sub Total Cost - \$555.20

Subtotal 2,082.90  
Sales Tax  
Freight 0.00

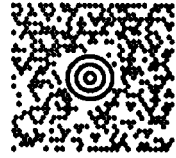
TOTAL ORDER AMOUNT 2,082.90

*S. Ellegren*

IP7\_027926

FROM:  
BRENT NATIONS  
(970) 824-1057  
B & B WELDERS SUPPLY INC.  
124 WEST FOURTH ST.  
CRAIG CO 81625

47 LBS 1 OF 1



UT 846 1-00



SHIP TO:  
TEI  
INTERMOUNTAIN POWER PLANT  
850 WEST BRUSH  
DELTA UT 84624

UPS NEXT DAY AIR

TRACKING #: 1Z XX8 389 01 4099 7498

1



BILLING: P/P

UOW 6.0.21 XEROX Document 27.0A 01/2004

Fold here and place in label pouch

*J. Ellegren*

IP7\_027927



401. 1/5

## DESCRIPTION OF WORK PERFORMED

[illegible]

### Equipment:

**Material:**

TEI Approval:

**Customer Approval**

**IP7\_027928**

**WO 9396033-00**  
**INSTALL 48 LOW NOX BURNERS**  
**PO/CONTRACT 04-45618**  
**SPEC 45618**  
**ACCOUNT 00-2SBX-402**  
**\$28,761 of BACK CHARGES TO ABT**

WO# SUB	TEI EST	TEI FINAL	1 <sup>st</sup> REQ	2 <sup>nd</sup> REQ	POA	COMMENTS
012	\$474	\$408	200214	200476	004	AIR TEST TUBING 1 <sup>ST</sup> 16 BURNERS
020	\$3232	\$3562	200214	200474	003	RMVE AND REPLACES ABT SEAL RINGS
021	\$5153	\$6098	200214	200520	006	DONUTS TO SEAL GAPS INGNTR/SCNNR
022	\$9356	\$4092	200214	200606	007	MDFY PKNG GLAND FOR ABB SCNNR
031	\$4232	\$2695	201214	200101	013	MODIFY HFDs BACK CHARGE
	\$22447	\$16855				

PURCHASE ORDER ITEMS SEPARATE FROM WORK RELEASE ITEMS						
WO# SUB	TEI EST	TEI FINAL	REQ#	PO#	COMMENTS	
012	\$959	\$816	200144	04-37477-L4	AIR TESTING REMAINING 32 BURNERS	
018	\$740	\$816	200144	04-37477-L4	REPAIR TWO DAMAGED BURNER RODS	
019	\$11380	\$10274	200133	04-37477-L1	ESTIMATED 169 TUBE REPAIR WELDS	
	\$13079	\$11906				

WO# Subs 012 & 19 - Static pressure and total pressure ½' stainless steel tubing on the burners were air tested when received and found to leak. This Resulted in additional testing of all 48 burners. TEI ended up making 149 heli- arc tube welds to correct the 34 leaks that were found. Most of the burners were staged inside that U2 boiler so that the heli-arc welding rigs had to be dragged around from floor to floor and burner to burner. Sal was sent photos and email on this item while the work was going on.

WO# Sub 20 - The seal ring between the burner front plate and the windbox was sent out on the burners as a hoop. ring. The hoop ring was only 1/4" thick and would not gap the distance between the burner front plate and the windbox making welding impossible. ABT sent out an angle bent into a hoop that had a 2" leg to bridge the gap between the burner front plate and the windbox. All of the burners were staged in Unit 2 by the time the angle hoops came. The original plate hoops had to be removed from the burners and replaced with an angle hoop prior to burner

installation. Sal was sent photos and email on this item while the work was going on

WO# Sub 21 - Burners were fabricated with a 1/2" to 3/4" gap between the outer sleeve of the OFA igniters and the ABT Scanners. The outer sleeves could not be welded into position without the use of 1/4 plate donuts that were used to bridge the gaps on all 48 burners in 144 places. Sal was sent photos and email on this item while the work was going on.

WO# Sub 31 - The horizontal fuel diffusers would not fit into the coal elbows without removing about 1/4" to 3/8" from the chrome plates that make up the leading edge of the fuel diffuser. This work required that a plasma torch be rented and used to trim the chrome plate. All 48 horizontal fuel diffusers had to be cut. Sal was sent photos and email on this item while the work was going on.

WO# Sub 18 - Two of the drive rods for the outer damper sleeve were damaged during shipping. TEI sent out new drive rods. Sal was sent photos and email on this item while the work was going on.

WO# Sub 22 - ABB directed IPSC to place locking bolts in the existing 3" schedule 40 pipe on the burner register plate. ABB then decided to go with full couplings see ABB drawing STNRD - D2322666-105. TEI had drilled all of the holes by this time. Bolts were placed in the tapped holes to plug them and to provide additional stability to scanner tube.

**From:** James Nelson  
**To:** Howard Hamilton; Phil Hailes  
**Date:** 8/20/2004 3:07:48 PM  
**Subject:** Fwd: IPSC Contract 04-45606 Status

Sal just sent this fyi.

>>> "Sal Ferrara" <sal@advancedburner.com> 8/20/2004 12:35:35 PM >>>

James,

Attached is ABT letter concerning the status of the contract, retention, and also our report summarizing testing performed in May.

Joel Vatsky and I would like to plan a trip the end of this month to meet with you at the plant as you suggested. We would travel on Tuesday August 31st , meet with you on Wednesday Sept. 1st , then travel home on Thursday Sept. 2nd.

Please confirm whether or not this works with your schedule.

Sal

**IP7\_027931**



271 Route 202/206  
P.O. Box 410  
Pluckemin, NJ 07978 USA  
Phone 908-470-0470  
FAX 908-470-0479

**Diagnostic Test Report**

**for**

**Opti-Flow<sup>TM</sup> Low NO<sub>x</sub> Burners**

**on**

**Intermountain Power Service Corporation**

**Delta Unit 2**

**August 20, 2004**

**1.0 Introduction**

**IP7\_027932**

Intermountain Power Service Corporation (IPSC) Delta Unit 2 is a B&W pulverized coal, supercritical boiler rated at 6,900,000 pounds of steam per hour. This unit fires western bituminous coal originally using 48 OEM dual register low NO<sub>x</sub> burners. NO<sub>x</sub> emissions with those burners were typically in the range between 0.4 and 0.45 lb/10<sup>6</sup> Btu at full load. Intermountain Unit 2 was retrofitted with 48 ABT's Opti-Flow™ Low NO<sub>x</sub> burners during the March 2004 outage. In addition, secondary air duct/windbox turning vanes and baffles were designed and installed in the windboxes in order to correct the existing air mal-distribution and instabilities within each windbox. Modifications to install the secondary air duct vanes and baffles are to be implemented by IPSC during the next outage.

ABT has demonstrated operating NO<sub>x</sub> levels at full load to be below 0.33 lb/10<sup>6</sup> Btu with 48 Opti-Flow™ low NO<sub>x</sub> burners and one mill out of service; with overfire air port closed.

### The purposes of the retrofit are:

1: Minimize NO<sub>x</sub> without detrimental effects on boiler performance, reliability and efficiency. ABT guarantees that NO<sub>x</sub> will not exceed 0.33 lb/10<sup>6</sup> Btu, with overfire air ports closed, at the design excess air of Proposal Section 4.6 and 100% MCR. ABT predicts that NO<sub>x</sub> with OFA ports open, with a flow of 20% of the total combustion air, will be less than 0.25 lb/MMBtu. NO<sub>x</sub> is a function of several fuel variables, primary among them is fixed carbon to volatile matter (FC/VM) ratio and % fuel-bound nitrogen. Figure 1 represents the change in NO<sub>x</sub> guarantee parametrically in FC/VM against fuel nitrogen content as lb. N<sub>2</sub>/10<sup>6</sup> Btu.

Note: The guarantee point represents the fuel properties specified in Proposal Section 4.9: 1.2% N<sub>2</sub> and 11.500 Btu/lb corresponds to 1.04 lb N<sub>2</sub>/10<sup>6</sup> Btu.

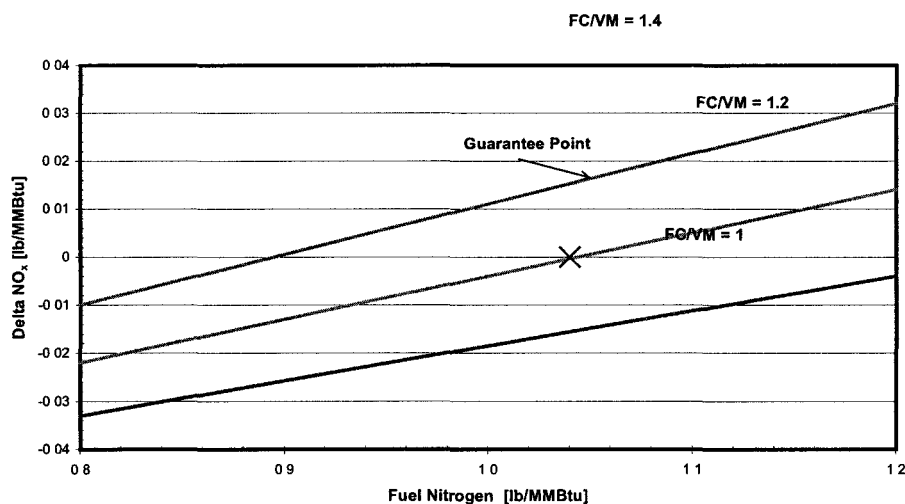


Figure 1 Change in NO<sub>x</sub> vs. Fuel Properties

### 2 : Other guarantees

CO will not exceed an average of 200 ppm, with overfire air ports closed. LOT will not exceed the values obtained in pre-outage baseline testing; with overfire air ports closed with no more than 5% leakage/cooling air flow.

Boiler performance will not be deteriorated from the performance obtained during the baseline tests. Commercially acceptable variations in individual measured data will be acceptable (i.e., super heat temperature  $\pm 10^{\circ}$  F, etc.). Boiler efficiency will not be lower than the baseline measurements, corrected for excess air and fuel conditions.

### 3: Burner Optimization

ABT field service engineers spent 9 days (May 18-26, 2004) assisting plant engineers in tuning IPSC Unit 2 in order to minimize CO. The goal of this tuning was to find one set of burner setting for all mill configurations to meet the CO and NOx limit.

IPSC installed turning vanes and perforated plate inside burner windboxes based on Air Flow Sciences (ASC) model, however there was insufficient time available to install the recommended turning vane arrangement in secondary air supply ducts. Currently the bottom level burners are starved for secondary air. DCS data shows the bottom windbox duct pressure is only 50-60% of the average of the other 3 decks for both front and rear walls as shown in Fig 2.

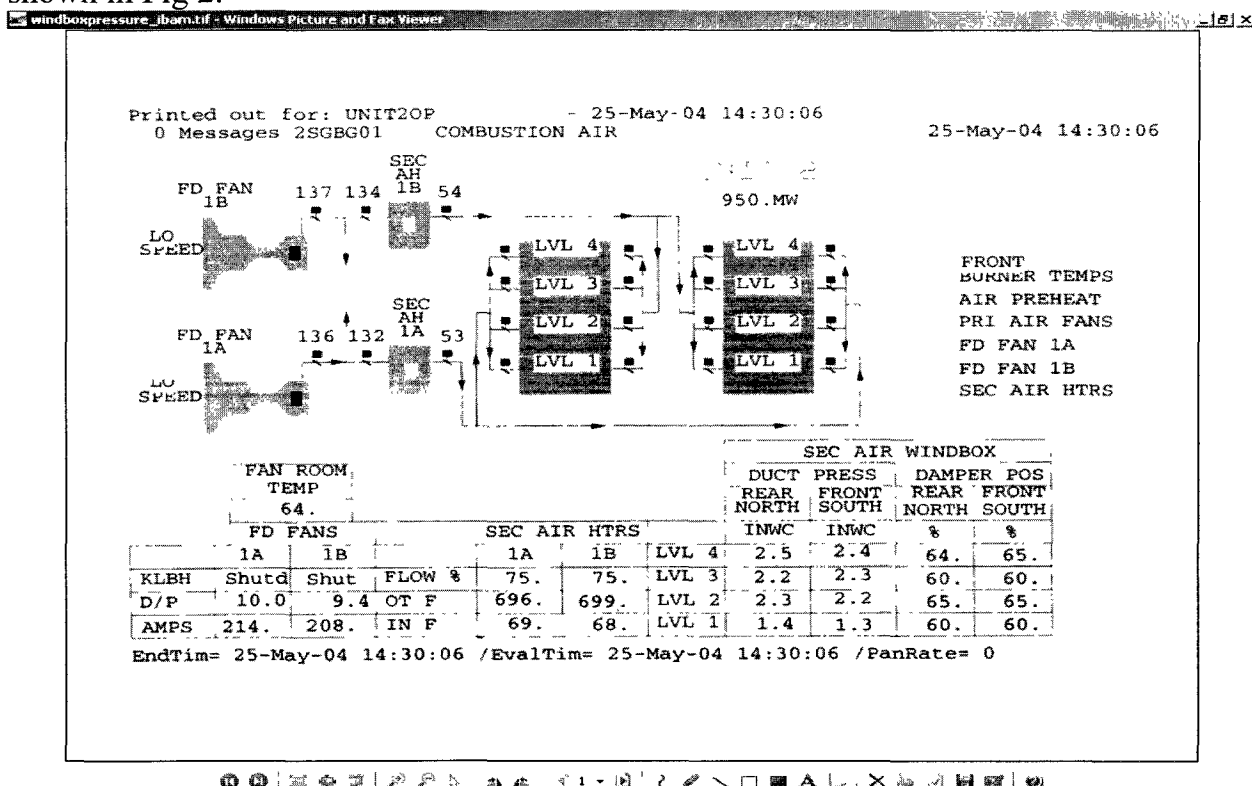


Fig 2 Secondary Air Windbox Pressure

During the testing the fuel quality changed. In Fig 3 the SO<sub>2</sub> changed frequently indicating the change of fuel, and the NO<sub>x</sub> followed the change.

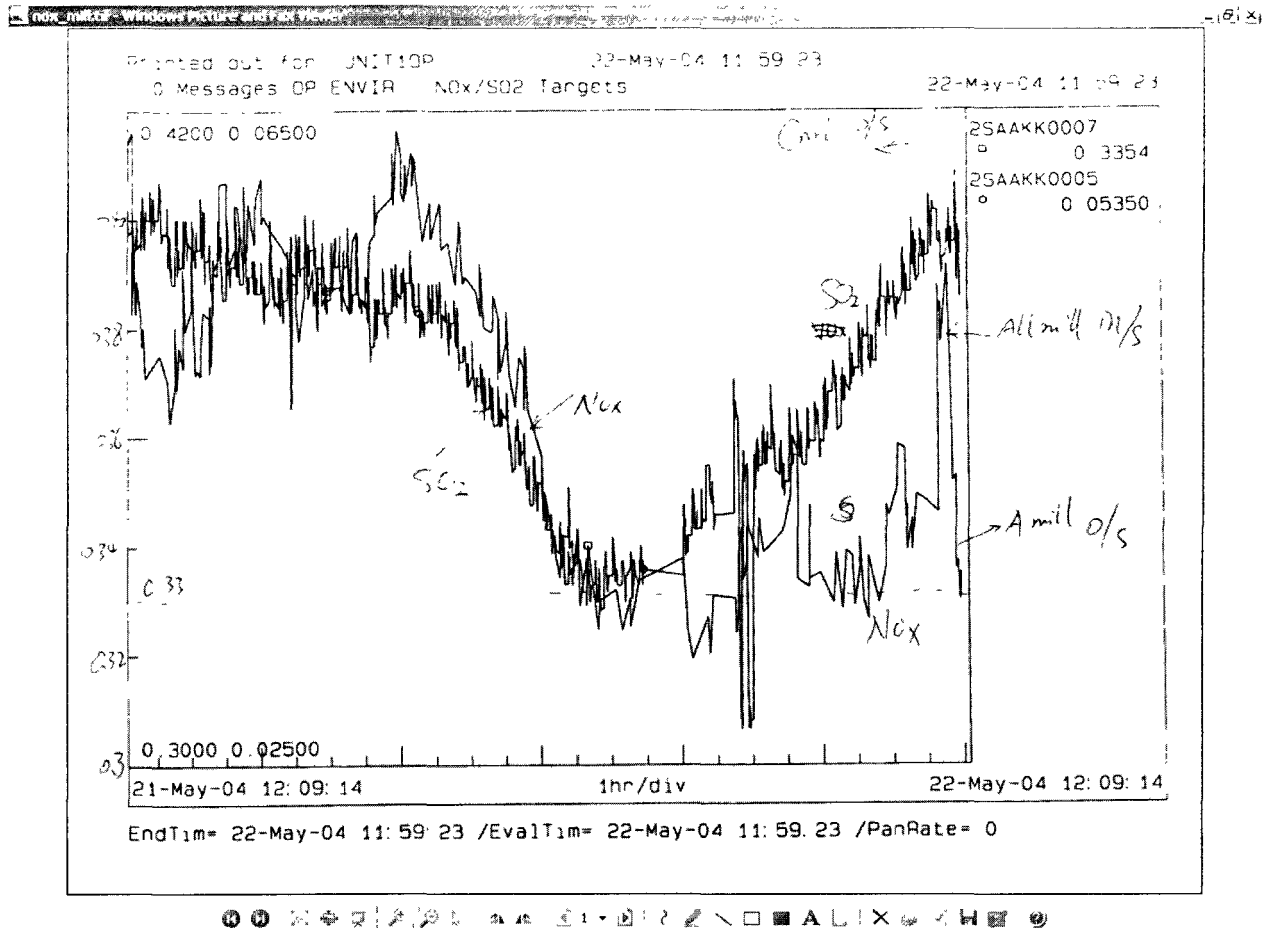


Fig 3 Sulfur Content Changes Indicate Fuel Change

Both sides SA damper control signals are linked, operators can not control west and east SA damper individually which hampers ability to achieve optimum windbox balance.

The gas damper for reheat steam temperature control could redirect the exit gas streamline making it difficult to correlate measured exit gas emissions data to burner location. Also test tap 4 point 4 may have some leakage since the O<sub>2</sub> is always high for that probe.

Several Pulverizers require maintenance. Some have differential pressure above 15" WC, this was noted on pulverizers A,C, and E on May21st. Only H mill's differential pressures was noted below 10" WC for all test days.

There were only 2 gas analyzers for CO/O<sub>2</sub> (NO<sub>x</sub> analyzer not available). The grid was setup according to ASME standard, however with this setup it is difficult to correlate grid data to specific burner columns. Also extracting data from the grid was time consuming with it taking over an hour to generate a test profile with readings fluctuating constantly.



NOx, LOI, and CO data recorded during ABT test period are summarized in Table 1.

**Table 1: LOI and NOx for IPSC Unit2**

Time	Nox (cem)	LOI	O2	CO
16-May	0.28	3.5	X	X
17-May	0.26	3.45	X	X
18-May	0.32	4.4	3.23	206.00
19-May	0.29	1.1	3.30	104.00
20-May	0.26	2	3.50	250.00
21-May	0.335	3.75	3.01	206.50
22-May	0.33	3.9	3.36	276.00
23-May	0.34	3.2	3.61	304.00
24-May	0.26	2.6	3.41	281.00
25-May	0.325	X	3.28	304.50
26-May	0.327	X	3.27	157.00

### LOI and NOx for IPSC Unit 2 with ABT Opti-Flow LNB

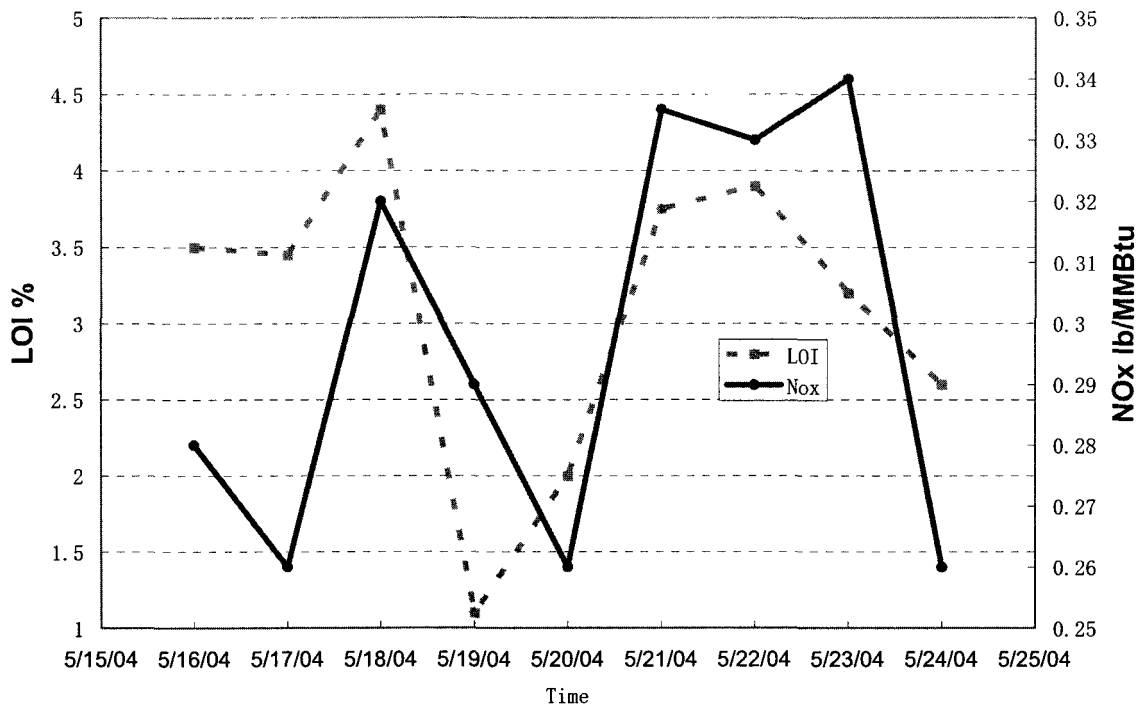


Fig 4 LOI and NOx for IPSC Unit2, Fuel Changed on May 21<sup>st</sup>

Testing grids were installed according to ASME standard.

CO and O2 data for all tests (IPSC & ABT test periods) are summarized in Table 2.

**Table 2: Overall CO and O2 for All Tests**

Testing time	Ave. Grid O2	Ave. Grid CO
April 27 All I/S	3.34	33.395
April 27 All I/S	3.67	17.105
April 28 C O/S	3.78	380.49
April 28 D O/S	3.695	200.315
April 29 E O/S	3.19	662.525
April 29 A O/S	3.055	537.015
April 30 H O/S	3.52	172.555
April 30 H O/S	3.805	69.145
May 3 G O/S	2.985	830.835
May 3 G O/S	3.21	649.025
May 3 G O/S	3.335	595.9
May 4 B O/S	2.99	743.325
May 4 D O/S	3.15	691.06
May 4 D O/S	3.925	395.94
May 7 F O/S	3.48	614.3
May 18 All I/S	3.23	206
May 19 All I/S	3.3	104
May 20 F/O	3.5	250
May 21 All I/S	2.98	164
May 21 C O/S	3.04	249
May 22 C O/S	3.08	422
May 22 A O/S	3.64	130
May 23 H O/S	3.42	317
May 23 H O/S	3.68	323
May 23 H O/S	3.73	272
May 24 A O/S	3.41	281
May 25 All I/S	3.26	317
May 25 All I/S	3.09	357
May 25 All I/S	3.37	341
May 25 All I/S	3.38	203
May 26 All I/S	3.3	173
May 26 All I/S	3.23	141

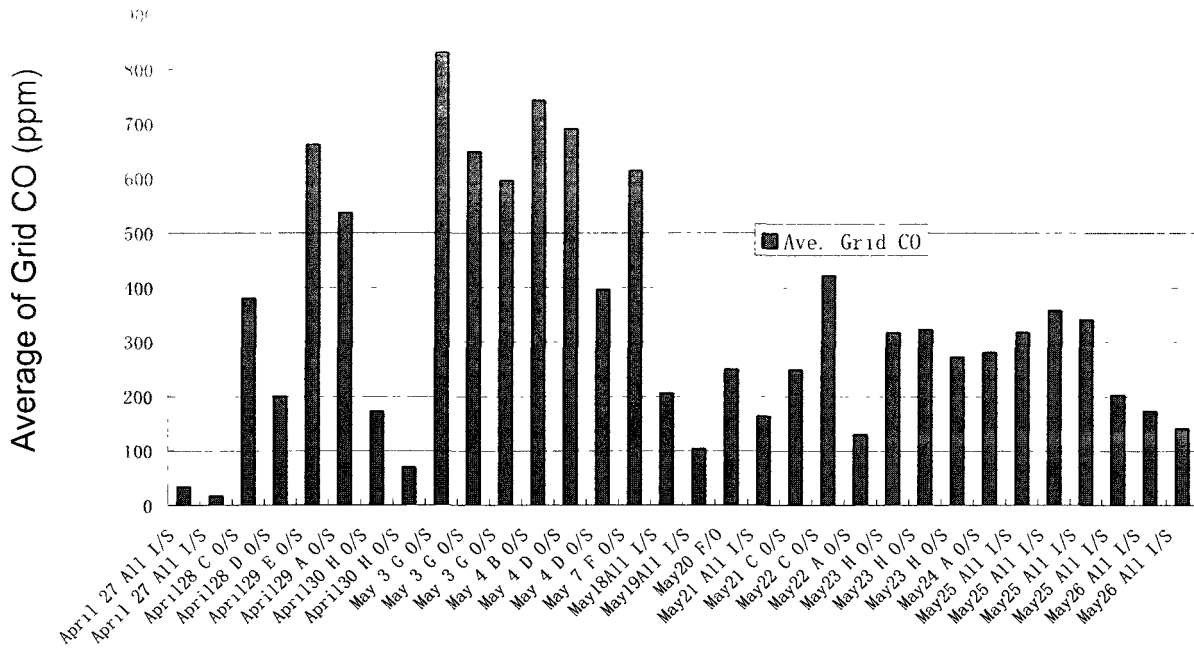


Fig 5 Overall CO

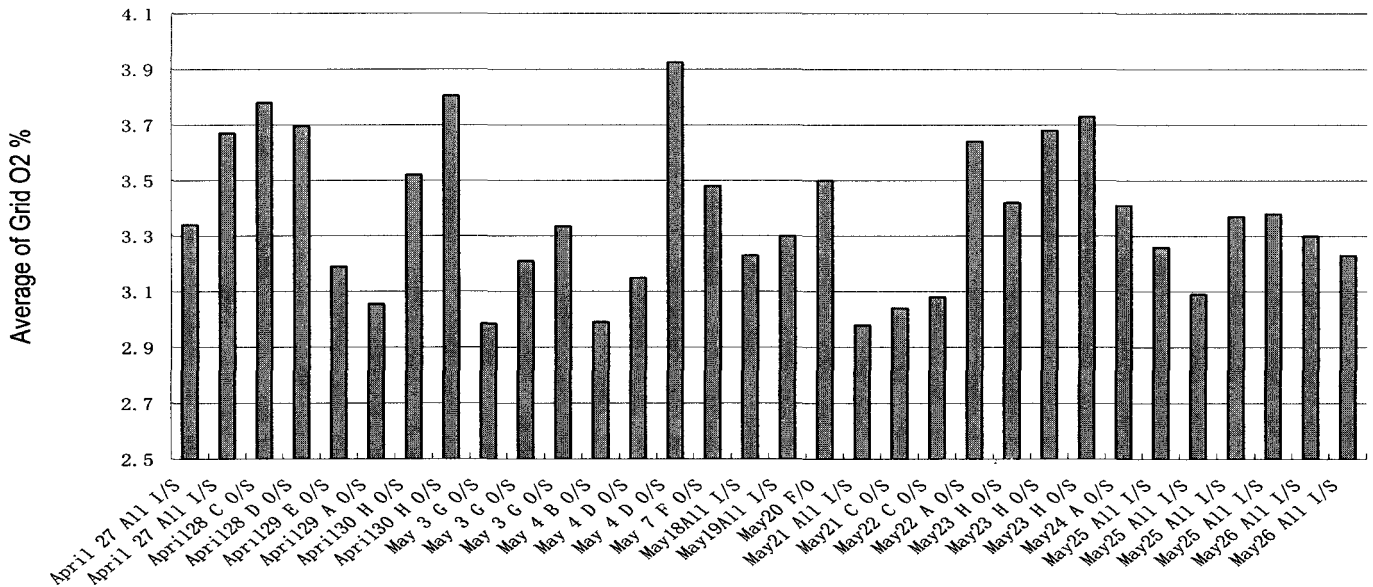


Fig 6 Overall O2

## **Conclusions:**

1. Testing shows that NO<sub>x</sub> can be controlled on a daily basis below the guarantee 0.33lb/MMBtu.
2. CO can be maintained under 200ppm with all mills in service. Burner settings determined from the 9 days of ABT testing resulted in considerable reduction in the CO emissions, under the various mill out conditions. The optimization process illustrated during the testing was successful in isolated burners that were main contributors to CO formation. Adjusting component settings on these specific burners improved their flames and resulted in reduction in CO emissions on the boiler.
3. Use of a professional testing company would assist ABT field engineers with timely test information in a profile correlated to burner location. This should result in further reductions in the average CO emissions on a daily basis.
4. Installing ABT designed turning vane modifications inside of SA supply ducts will improve flow distribution to bottom level burners. This is key to further reductions in CO emissions for the worst case mill out configurations.
5. Maintaining the coal quality as constant as possible will facilitate obtaining repeatable results during future optimization testing.
6. Unlinking the control signal between east and west side SA dampers will allow greater flexibility to bias the east/west side secondary air, which should help optimize windbox air balance.
7. Performing maintenance on the mills will further improve combustion performance. We are not able to comment on the affect the primary air system has on the emissions in absence of test data related to burner line balance, mill coal fineness, and coal analyses.
8. Installation of additional pressure probes inside existing windboxes test ports on each of the levels would allow measuring of the pressure distribution across the windbox.

**Detail test results and burner settings are provided in the Appendix**

## Appendix

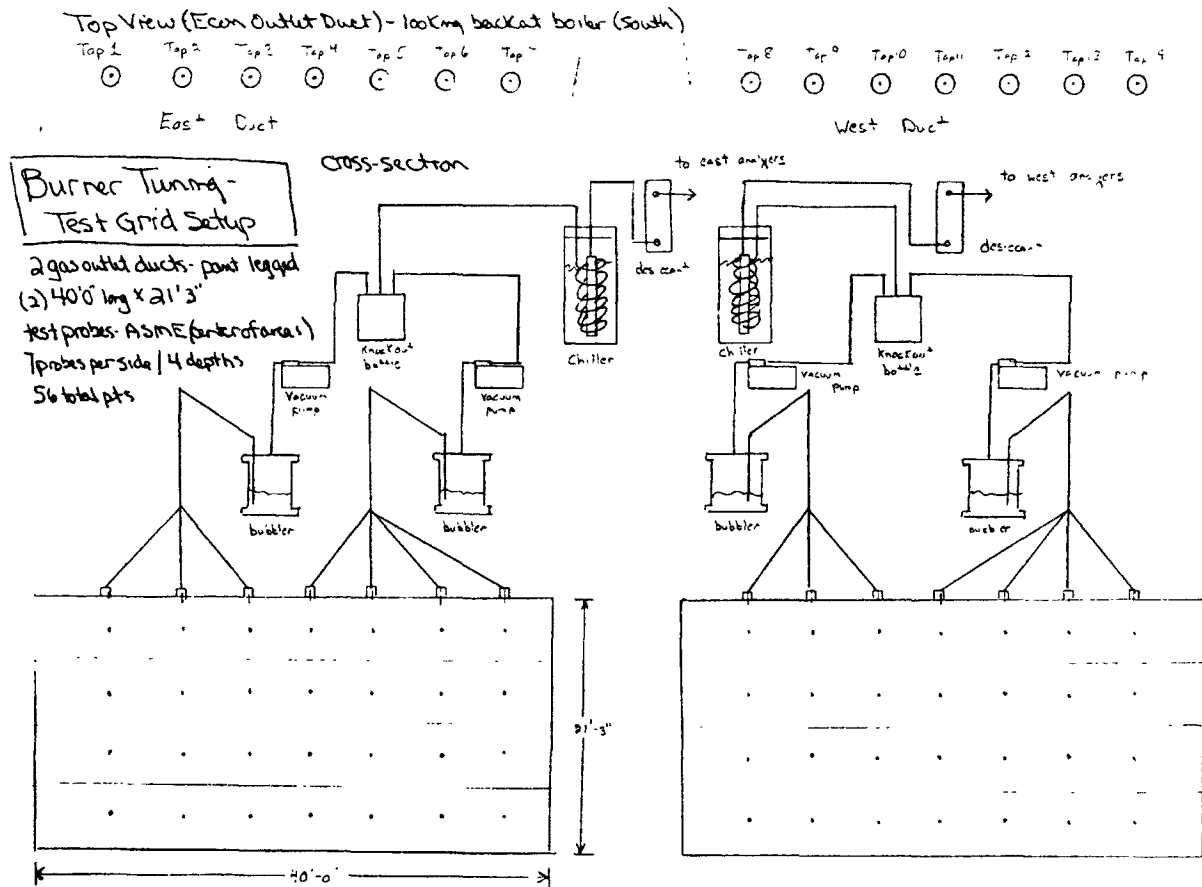


Fig 1 Grid Arrangement for CO and O2

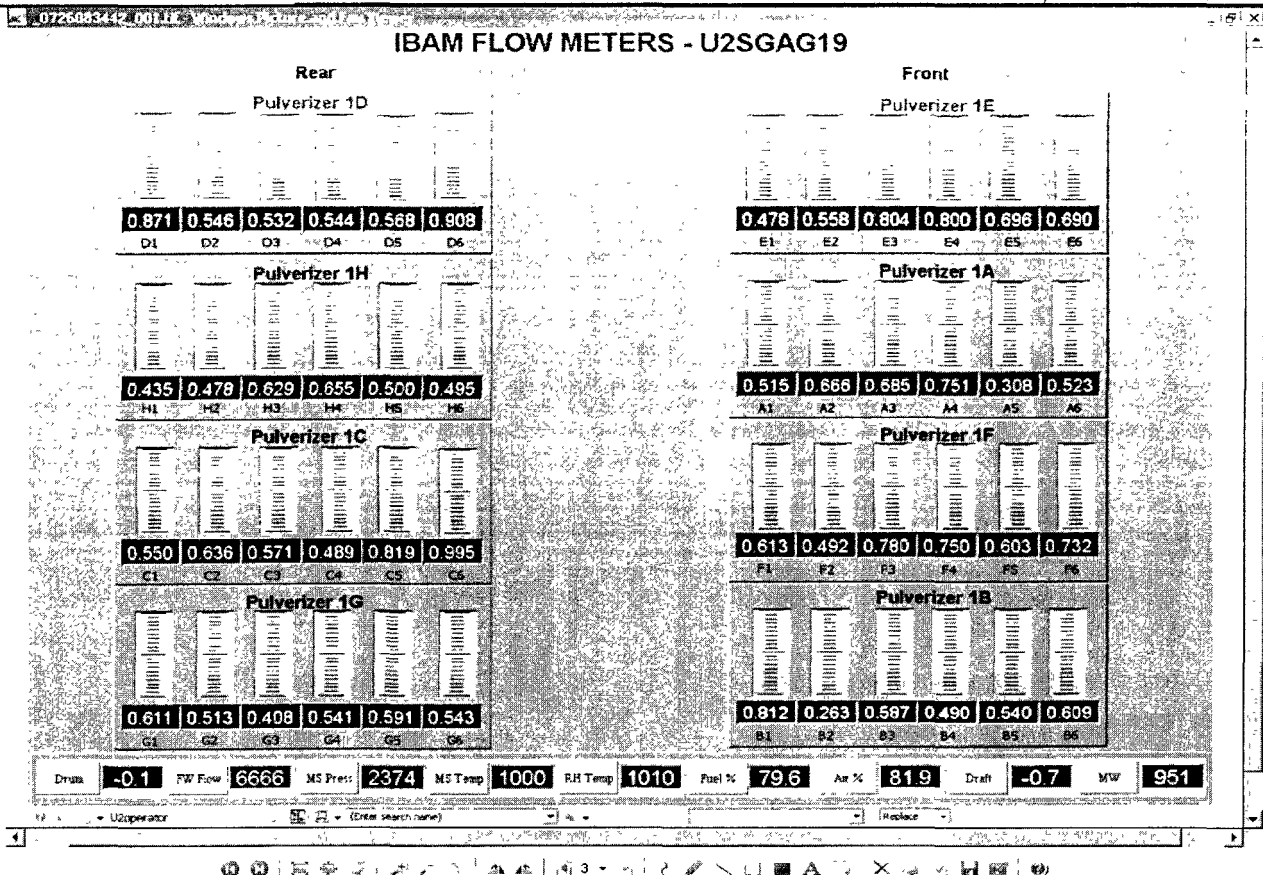


Fig 2 IBAM screen print

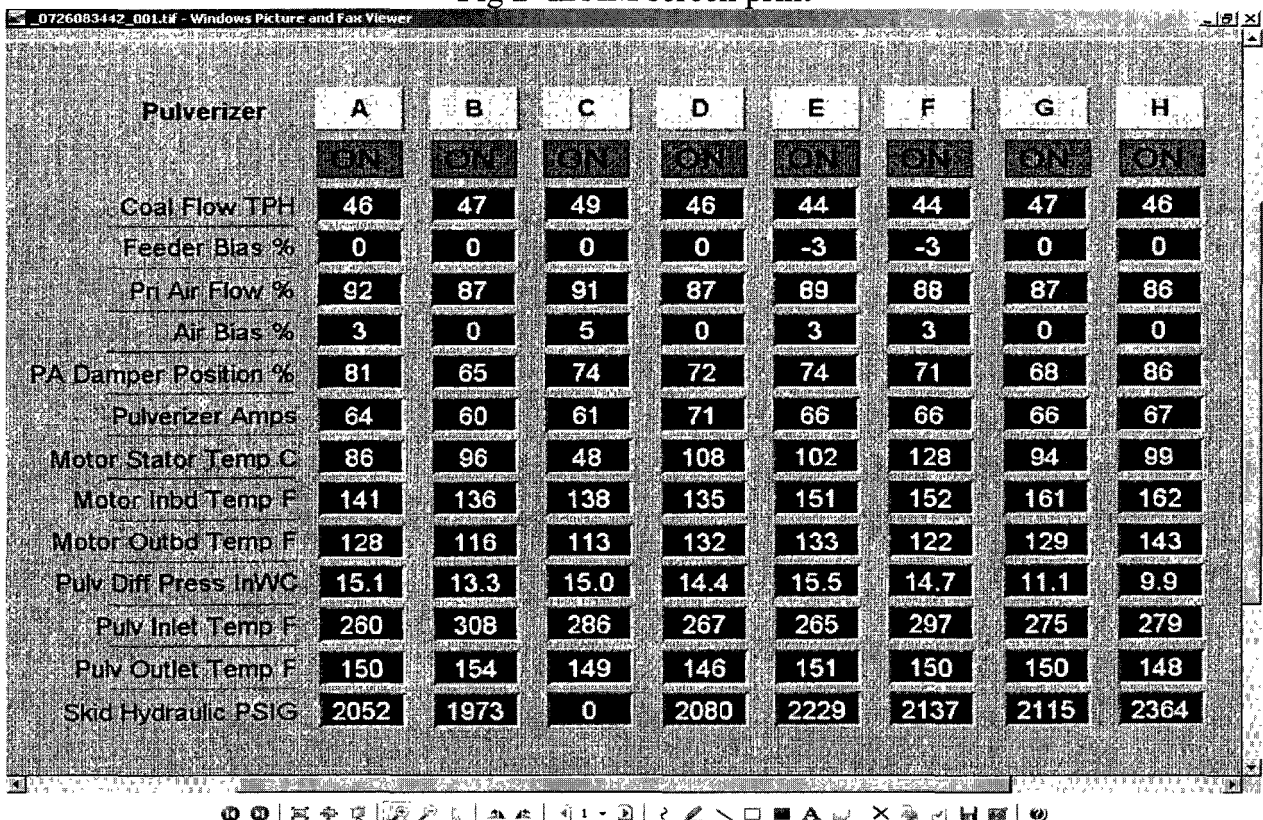


Fig 3 Pulverizer Operation Condition

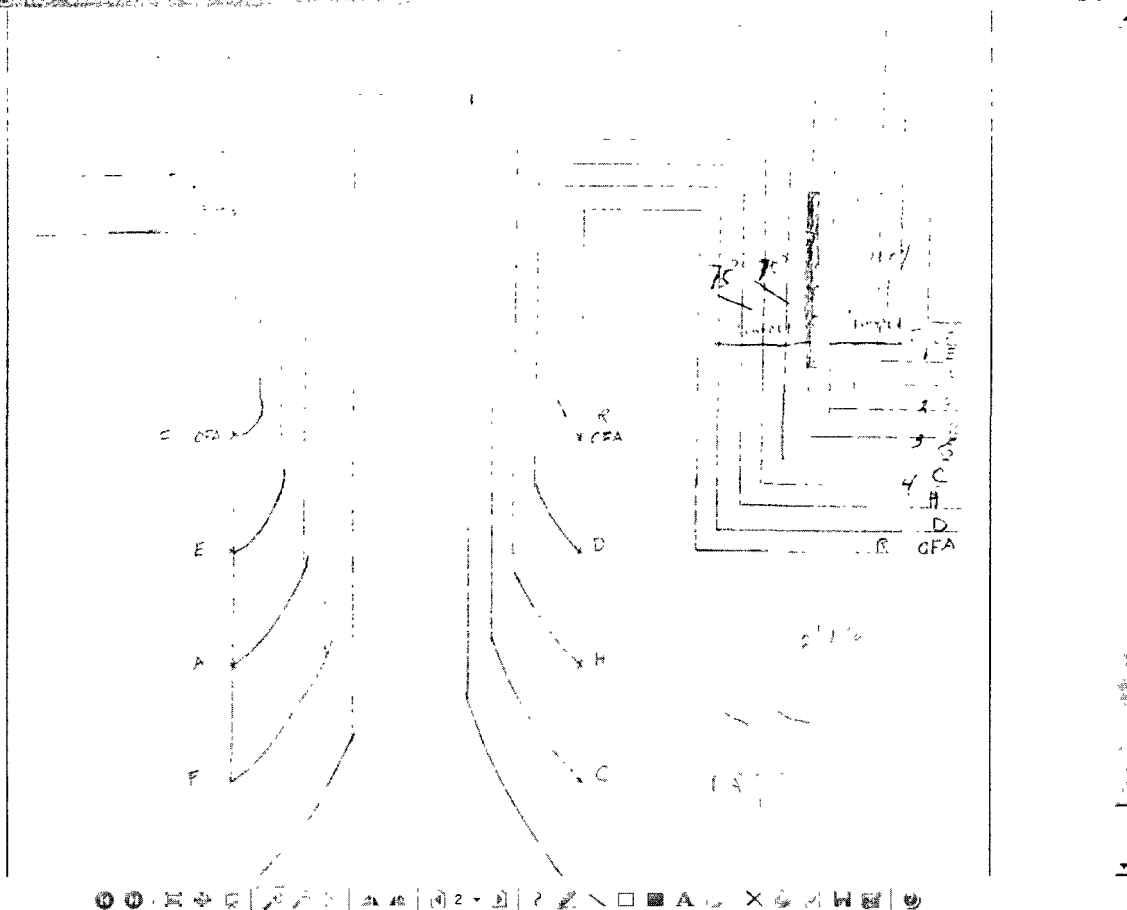


Fig 4 Burner Layout and Streamline

**Testing Log summary:**

**Table 1: LOI and NOx for IPSC Unit2**

Time	Nox (cem)	LOI	O2	CO
16-May	0.28	3.5	X	X
17-May	0.26	3.45	X	X
18-May	0.32	4.4	3.23	206.00
19-May	0.29	1.1	3.30	104.00
20-May	0.26	2	3.50	250.00
21-May	0.335	3.75	3.01	206.50
22-May	0.33	3.9	3.36	276.00
23-May	0.34	3.2	3.61	304.00
24-May	0.26	2.6	3.41	281.00
25-May	0.325	X	3.28	304.50
26-May	0.327	X	3.27	157.00

**Table 2: Overall CO and O2 for All Tests**

Testing time	Ave. Grid O2	Ave. Grid CO
April 27 All I/S	3.34	33.395
April 27 All I/S	3.67	17.105
April 28 C O/S	3.78	380.49
April 28 D O/S	3.695	200.315
April 29 E O/S	3.19	662.525
April 29 A O/S	3.055	537.015
April 30 H O/S	3.52	172.555
April 30 H O/S	3.805	69.145
May 3 G O/S	2.985	830.835
May 3 G O/S	3.21	649.025
May 3 G O/S	3.335	595.9
May 4 B O/S	2.99	743.325
May 4 D O/S	3.15	691.06
May 4 D O/S	3.925	395.94
May 7 F O/S	3.48	614.3
May 18 All I/S	3.23	206
May 19 All I/S	3.3	104
May 20 F/O	3.5	250
May 21 All I/S	2.98	164
May 21 C O/S	3.04	249
May 22 C O/S	3.08	422
May 22 A O/S	3.64	130
May 23 H O/S	3.42	317
May 23 H O/S	3.68	323
May 23 H O/S	3.73	272
May 24 A O/S	3.41	281
May 25 All I/S	3.26	317
May 25 All I/S	3.09	357
May 25 All I/S	3.37	341
May 25 All I/S	3.38	203
May 26 All I/S	3.3	173
May 26 All I/S	3.23	141

Test on May 18<sup>th</sup>: The burner settings were as follows:

**Table 3: Burner Settings on May 18<sup>th</sup> 2004**



UNIT 2			Spin	Inner	R7-5/17/04	R8-5/18/04
			Vanes	Air	Outer Register	Outer Register
Front	Pulv	E1	3.00	1.5	6.5	6.3
		E2	3.00	1.5	5.4	5.1
		min	3.00	1.5	5.0	4.6
		E	3.00	1.5	5.1	4.7
		E5	3.00	1.5	5.7	5.3
		E6	3.00	1.5	6.8	6.6
	Pulv	A1	3.75	1.5	8.7	8.5
		A2	3.75	1.5	7.3	6.8
		A	3.75	1.5	6.6	6.1
		A4	3.75	1.5	6.9	6.3
		A5	3.75	1.5	7.6	7.0
		A6	3.75	1.5	9.2	8.9
	Pulv	F1	3.25	1.5	6.8	6.5
		F2	3.25	1.5	5.6	5.3
		F	3.25	1.5	5.1	4.7
		F4	3.75	1.5	5.3	4.8
		F5	3.75	1.5	5.9	5.4
		F6	3.75	1.5	7.1	6.9
	Pulv	B1	3.75	1.5	10.3	10.0
		B2	3.75	1.5	8.6	8.0
		B	3.75	1.5	7.8	7.2
		B4	3.75	1.5	8.1	7.4
		B5	3.75	1.5	8.9	8.3
		B6	3.75	1.5	10.8	10.5
Rear			Spin	Inner	5/17/04	5/18/04
			Vanes	Air	Outer Register	Outer Register
	Pulv	D1	3.75	1.5	7.3	7.1
		D2	3.75	1.5	6.1	4.7
		D	3.75	1.5	5.5	4.0
		D4	3.75	1.5	5.7	4.5
		D5	3.75	1.5	6.3	6.3
		D6	5.00	1.5	7.6	10.3
	Pulv	H1	3.00	1.5	9.4	9.1
		H2	3.00	1.5	7.8	7.3
		H	3.00	1.5	7.1	6.6
		H4	3.00	1.5	7.3	6.7
		H5	3.00	1.5	8.1	7.5
		H6	3.00	1.5	9.8	9.5
	Pulv	C1	3.75	1.5	8.3	8.1
		C2	3.75	1.5	7.0	6.5
		C	3.75	1.5	6.3	5.9
		C4	3.75	1.5	6.5	6.0
		C5	3.75	1.5	7.2	6.7
		C6	3.75	1.5	8.8	8.5
	Pulv	G1	3.75	1.5	12.7	12.3
		G2	3.75	1.5	10.5	9.9
		G	3.75	1.5	9.6	8.9
		G4	3.75	1.5	9.9	9.1
		G5	3.75	1.5	11.0	10.2
		max	3.75	1.5	13.3	12.9

CO profile is shown as Fig 5.

U2 All Pulv US 5-18-04

### CO Profile

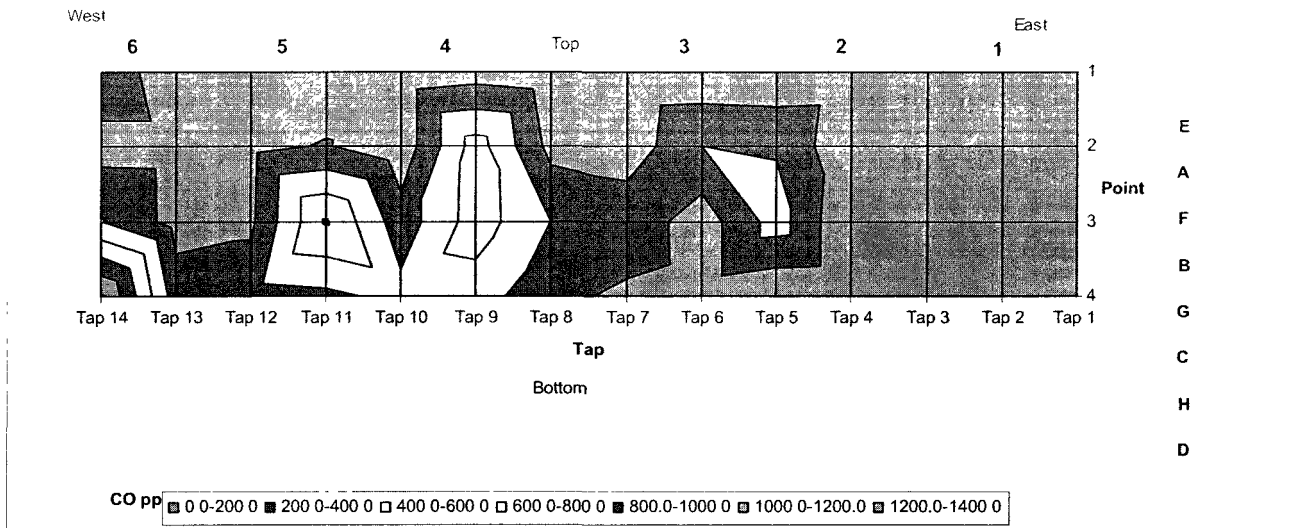


Fig 5 CO Profile 2D

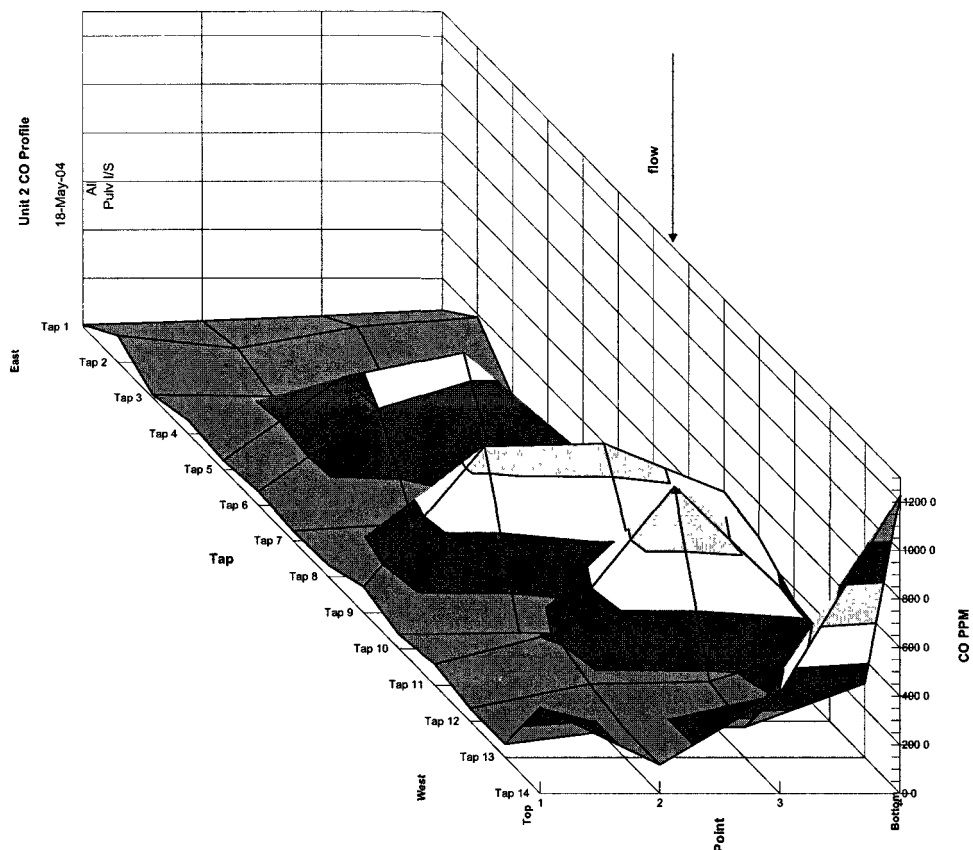


Fig 6 CO Profile 3D

O2 profile is shown as following:

U2 All PUV vs 5-18-04

O2 Profile

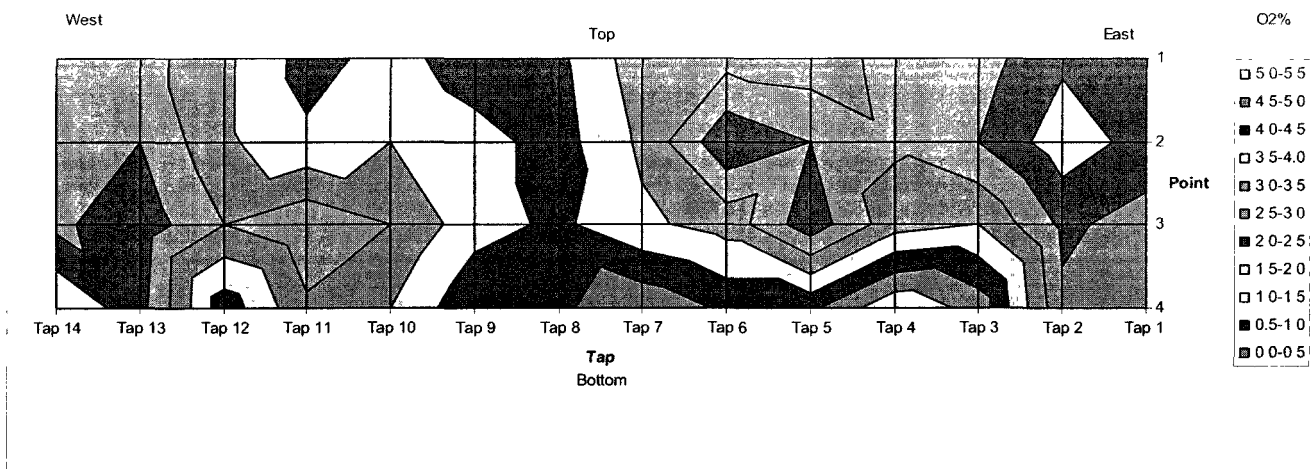


Fig 7 O2 Profile 2D

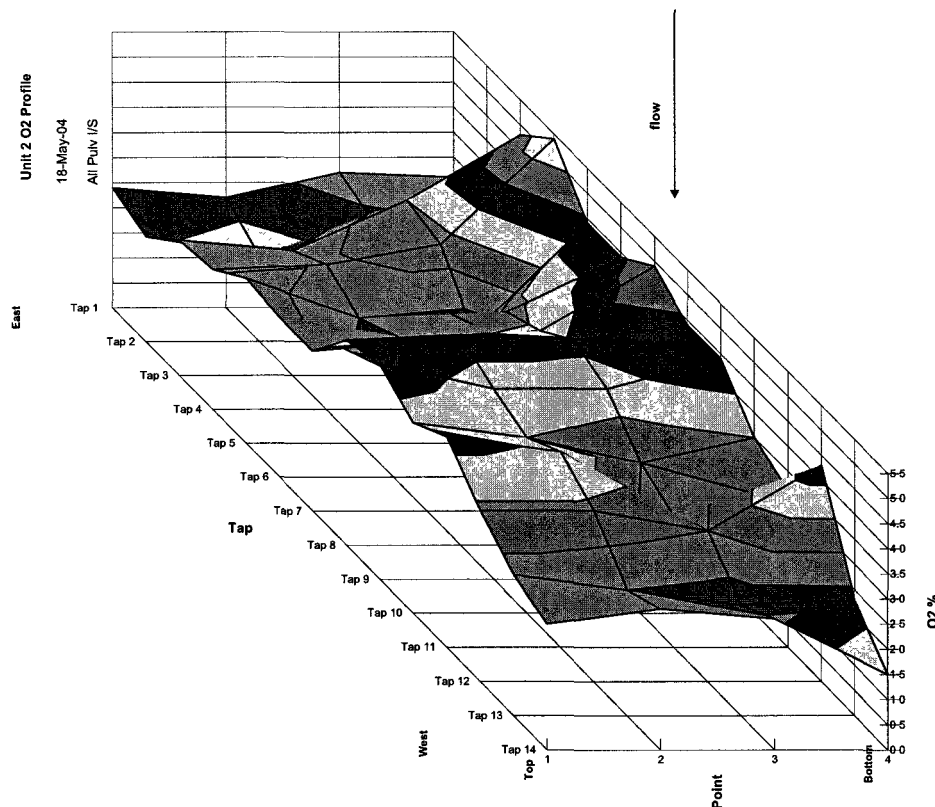


Fig 8 O2 Profile 3D

### Analysis:

High CO at the corner may be caused by the burner D6. ABT field engineers suggested opening D6 outer register from 7.6 to 10.3, close D1 D2 D3 D4 to 7.1, 4.7, 4.0, 4.5 respectively. After these changes D6 flame was significantly improved. CO dropped from 206 to 104 ppm.

The profiles recorded are as follows:

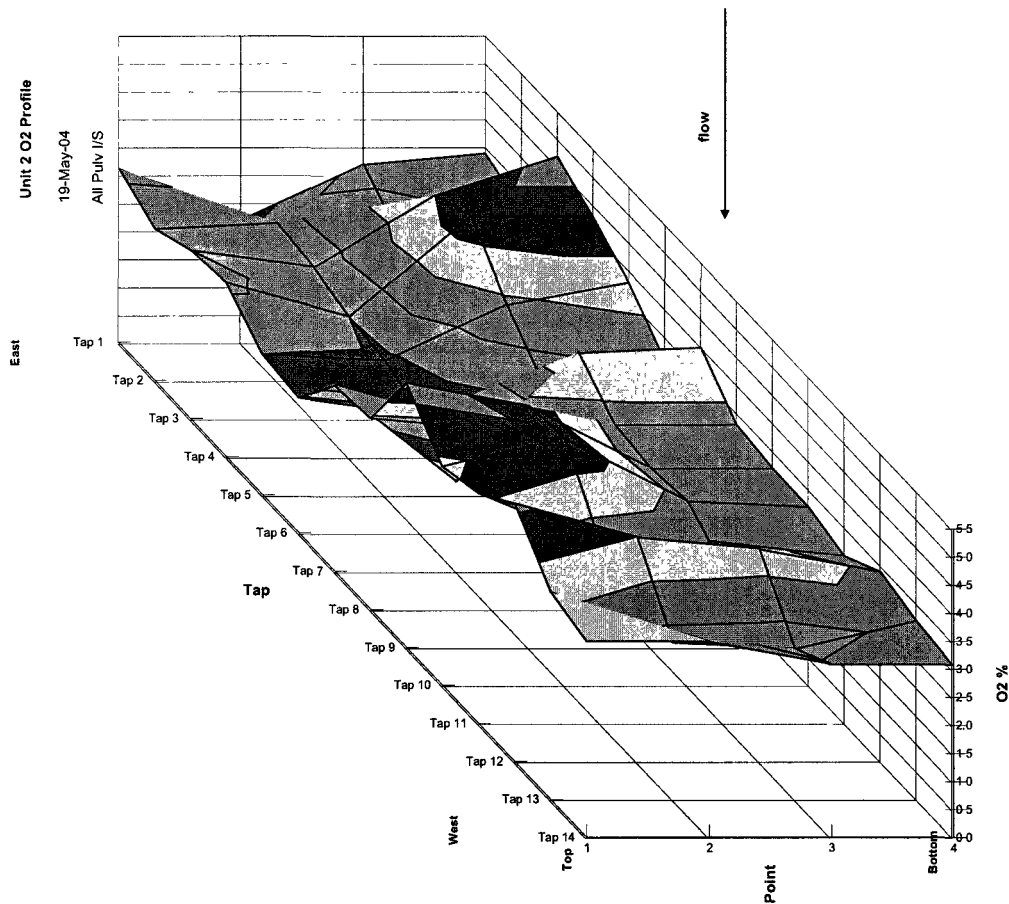


Fig 9 O2 Profile 3D

U2 All Pulv vs 5-19-04

O<sub>2</sub> Profile

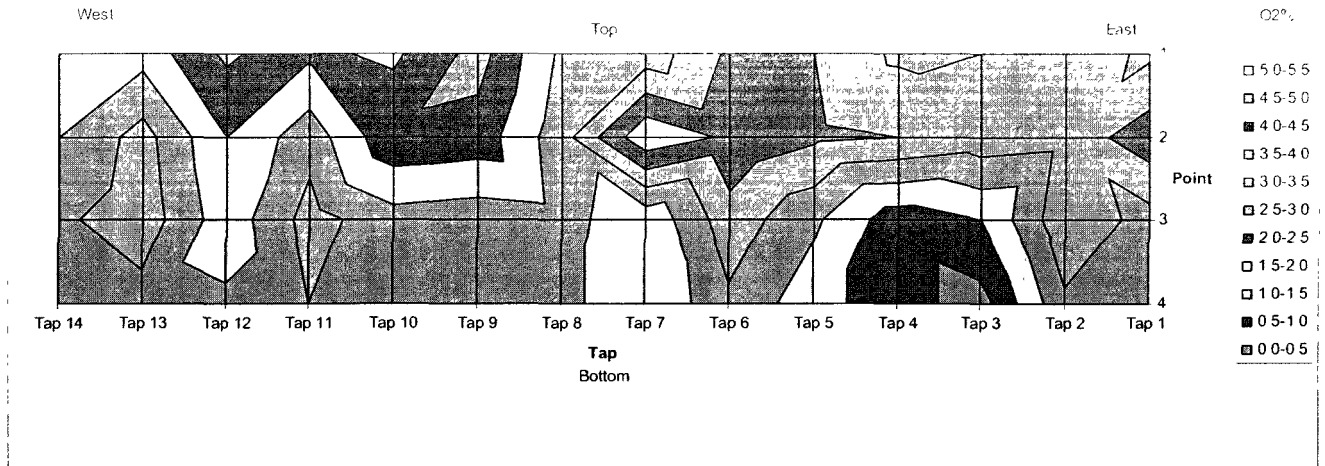


Fig 10 O<sub>2</sub> Profile 2D

U2 All Pulv i/s 5-19-04

CO Profile

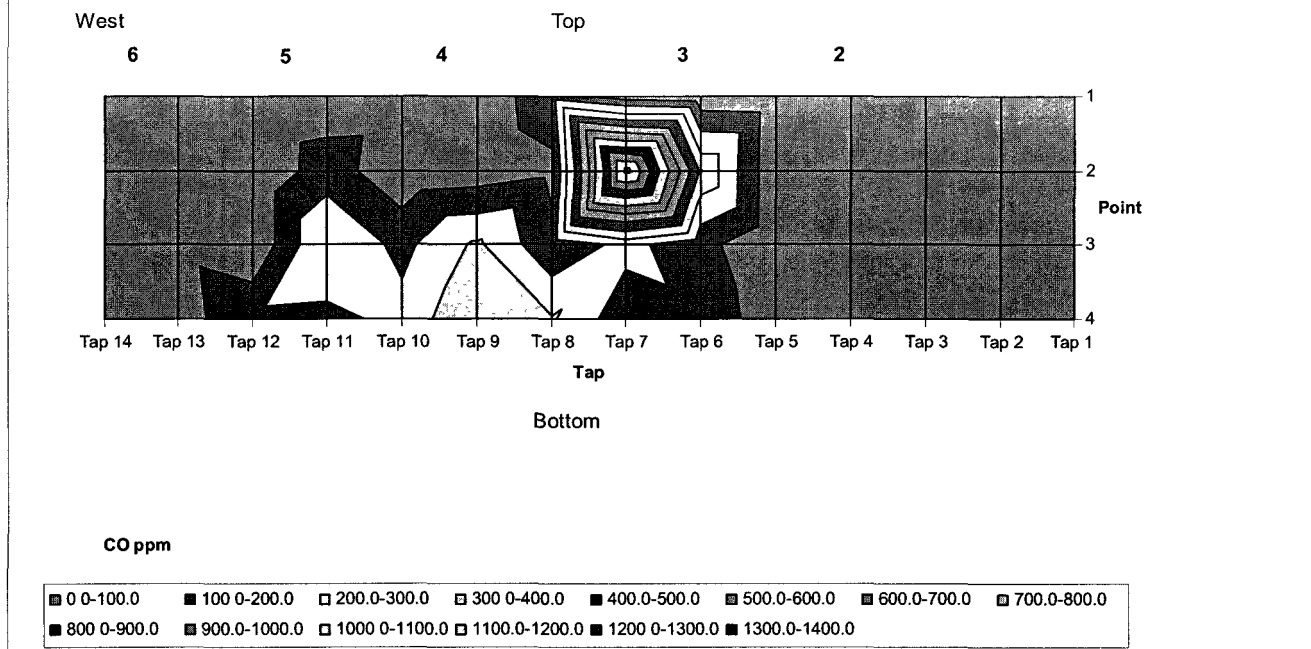


Fig 11 CO Profile 2D

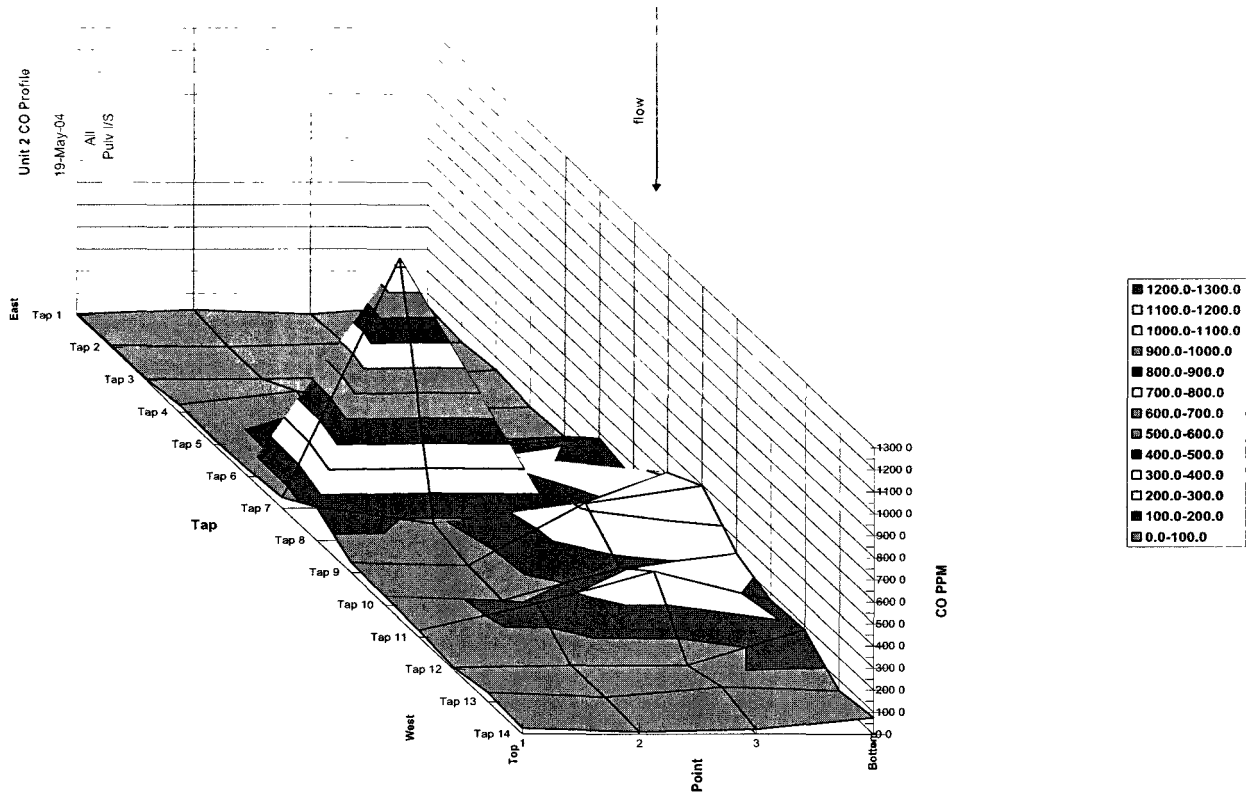


Fig 12 CO Profile 3D

May 20<sup>th</sup> F Mill O/S

ABT field service engineers and power plant engineers opened some spin vane to let more air go through to kill the high peak CO in last profile. From the results it seems we overacted. The CO in the center is low and west side is higher.

F mill had some problems and was O/S.

Table 4 Burner Settings on May 19<sup>th</sup> 2004

UNIT 2								
			Spin	Inner	5/18/04 Outer Register	Spin	Inner	5/19/04-5/20/04
			Vanes	Air		Vanes	Air	Outer Register
Front	Pulv	E1	3.00	1.5	6.3	3.75	1.5	6.5
		E2	3.00	1.5	5.1	3.75	1.5	5.3
	min E	E3	3.00	1.5	4.6	3.75	1.5	4.7
		E4	3.00	1.5	4.7	4.50	1.5	4.8
		E5	3.00	1.5	5.3	3.75	1.5	5.4

		<u>E6</u>	3.00	1.5	6.6	3.75	1.5	6.6
	Pulv	A1	3.75	1.5	8.5	3.75	1.5	8.7
		A2	3.75	1.5	6.8	3.75	1.5	7.0
	A	A3	3.75	1.5	6.1	3.75	1.5	6.3
		A4	3.75	1.5	6.3	4.50	1.5	6.5
		A5	3.75	1.5	7.0	3.75	1.5	7.2
		<u>A6</u>	3.75	1.5	8.9	3.75	1.5	8.9
	Pulv	F1	3.25	1.5	6.5	3.75	1.5	6.8
		F2	3.25	1.5	5.3	3.75	1.5	5.4
	F	F3	3.25	1.5	4.7	3.75	1.5	4.9
		F4	3.75	1.5	4.8	4.50	1.5	5.0
		F5	3.75	1.5	5.4	3.75	1.5	5.6
		<u>F6</u>	3.75	1.5	6.9	3.75	1.5	6.9
	Pulv	B1	3.75	1.5	10.0	3.75	1.5	10.3
		B2	3.75	1.5	8.0	3.75	1.5	8.3
	B	B3	3.75	1.5	7.2	3.75	1.5	7.5
		B4	3.75	1.5	7.4	3.75	1.5	7.6
		B5	3.75	1.5	8.3	3.75	1.5	8.5
		<u>B6</u>	3.75	1.5	10.5	3.75	1.5	10.5
Rear								
	Pulv	D1	3.75	1.5	7.1	3.75	1.5	7.1
		D2	3.75	1.5	4.7	3.75	1.5	4.7
	D	D3	3.75	1.5	4.0	3.75	1.5	5.0
		D4	3.75	1.5	4.5	3.75	1.5	5.0
		D5	3.75	1.5	6.3	3.75	1.5	6.3
		<u>D6</u>	5.00	1.5	10.3	5.00	1.5	10.3
	Pulv	H1	3.00	1.5	9.1	3.75	1.5	9.3
		H2	3.00	1.5	7.3	3.75	1.5	7.5
	H	H3	3.00	1.5	6.6	3.75	1.5	6.8
		H4	3.00	1.5	6.7	3.75	1.5	6.9
		H5	3.00	1.5	7.5	3.75	1.5	7.7
		<u>H6</u>	3.00	1.5	9.5	3.75	1.5	9.5
	Pulv	C1	3.75	1.5	8.1	3.75	1.5	8.3
		C2	3.75	1.5	6.5	3.75	1.5	6.7
	C	C3	3.75	1.5	5.9	3.75	1.5	6.1
		C4	3.75	1.5	6.0	3.75	1.5	6.2
		C5	3.75	1.5	6.7	5.00	1.5	6.9
		<u>C6</u>	3.75	1.5	8.5	3.75	1.5	8.5
	Pulv	G1	3.75	1.5	12.3	3.75	1.5	12.6
		G2	3.75	1.5	9.9	3.75	1.5	10.2
	G	G3	3.75	1.5	8.9	3.75	1.5	9.2
		G4	3.75	1.5	9.1	3.75	1.5	9.4
		G5	3.75	1.5	10.2	3.75	1.5	10.4
	max	<u>G6</u>	3.75	1.5	12.9	3.75	1.5	12.9

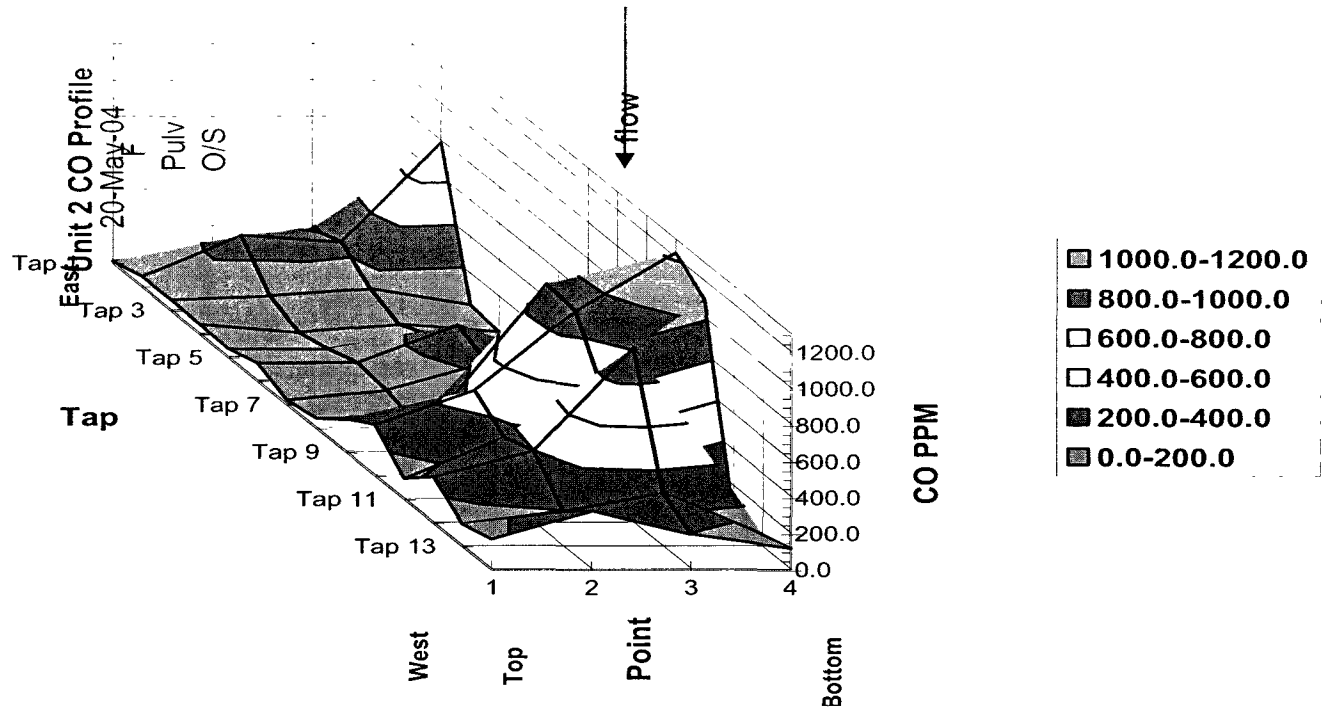


Fig 13 CO Profile 3D

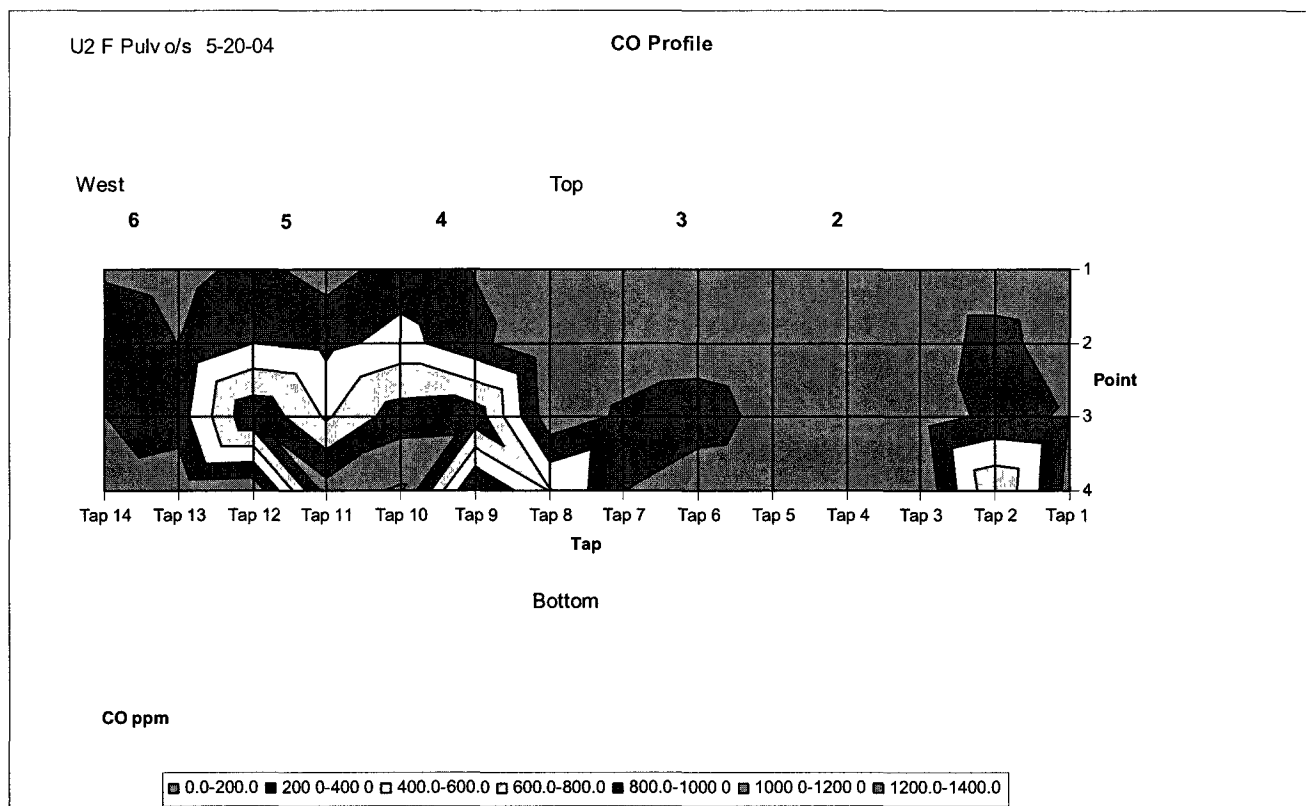


Fig 14 CO Profile 2D



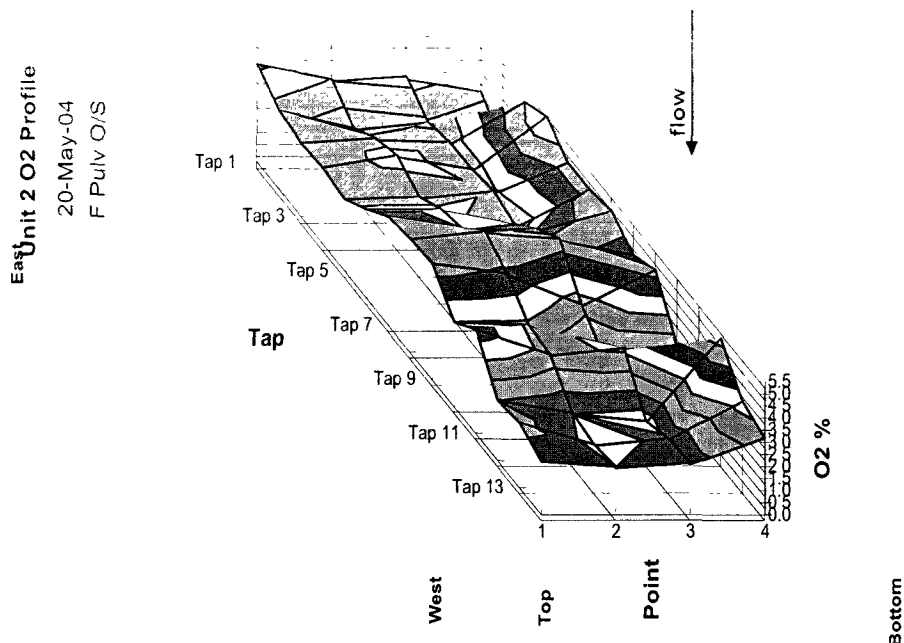


Fig 15 O2 Profile 3D

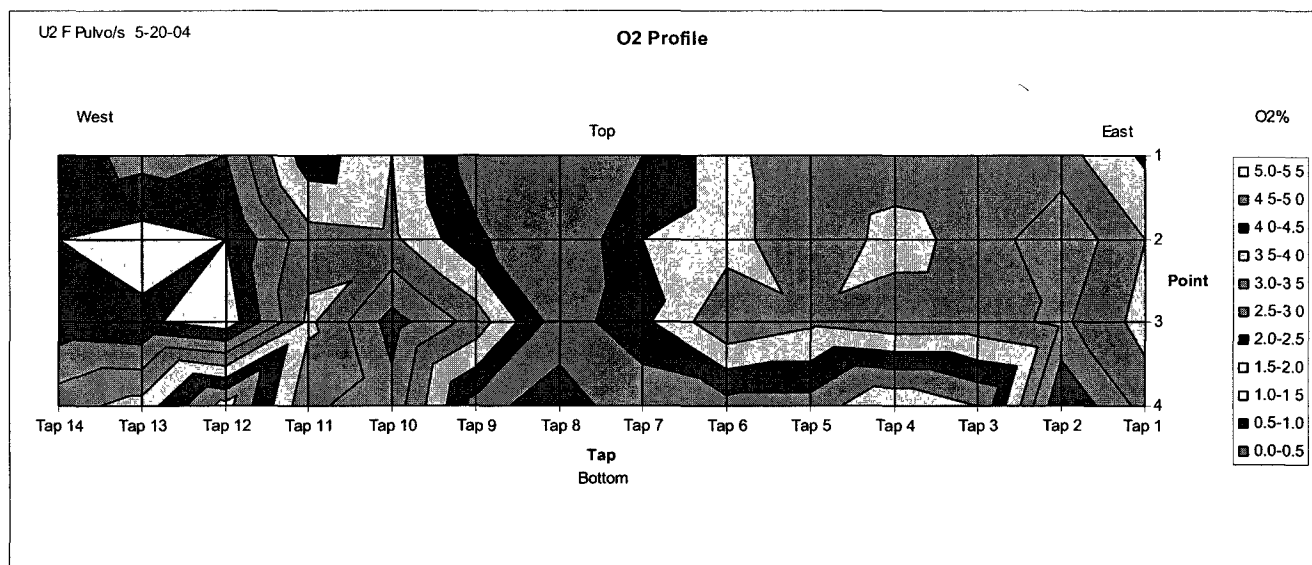


Fig 16 O2 Profile 2D

It seems too much air was taken from side to center so burner settings were changed to supply more air to the center. Open D1 to 8", close D3,D4 to 4.5"

May 21<sup>st</sup> F mill was back in service.

Table 5 Burner Settings on May 21st 2004

	5/18/04			5/19			All mill I/S 5/21/04		
	Spin Vaness	Inner Air	Outer Register	Spin Vaness	Inner Air	Outer Register	Spin Vaness	Inner Air	Outer Register
E1	3.00	1.5	6.3	3.75	1.5	6.5	3.75	1.5	6.5
E2	3.00	1.5	5.1	3.75	1.5	5.3	3.75	1.5	5.3
E3	3.00	1.5	4.6	3.75	1.5	4.7	4.25	1.5	4.7
E4	3.00	1.5	4.7	4.50	1.5	4.8	4.50	1.5	4.8
E5	3.00	1.5	5.3	3.75	1.5	5.4	3.75	1.5	5.4
E6	3.00	1.5	6.6	3.75	1.5	6.6	3.75	1.5	6.6
A1	3.75	1.5	8.5	3.75	1.5	8.7	3.75	1.5	8.7
A2	3.75	1.5	6.8	3.75	1.5	7.0	3.75	1.5	7.0
A3	3.75	1.5	6.1	3.75	1.5	6.3	4.25	1.5	6.3
A4	3.75	1.5	6.3	4.50	1.5	6.5	4.25	1.5	6.5
A5	3.75	1.5	7.0	3.75	1.5	7.2	3.75	1.5	7.2
A6	3.75	1.5	8.9	3.75	1.5	8.9	3.75	1.5	8.9
F1	3.25	1.5	6.5	3.75	1.5	6.8	3.75	1.5	6.8
F2	3.25	1.5	5.3	3.75	1.5	5.4	3.75	1.5	5.4
F3	3.25	1.5	4.7	3.75	1.5	4.9	4.25	1.5	4.9
F4	3.75	1.5	4.8	4.50	1.5	5.0	4.25	1.5	5.0
F5	3.75	1.5	5.4	3.75	1.5	5.6	3.75	1.5	5.6
F6	3.75	1.5	6.9	3.75	1.5	6.9	3.75	1.5	6.9
B1	3.75	1.5	10.0	3.75	1.5	10.3	3.75	1.5	10.3
B2	3.75	1.5	8.0	3.75	1.5	8.3	3.75	1.5	8.3
B3	3.75	1.5	7.2	3.75	1.5	7.5	3.75	1.5	7.5
B4	3.75	1.5	7.4	3.75	1.5	7.6	3.75	1.5	7.6
B5	3.75	1.5	8.3	3.75	1.5	8.5	3.75	1.5	8.5
B6	3.75	1.5	10.5	3.75	1.5	10.5	3.75	1.5	10.5
	5/18/04			5/19/04			All mill I/S 5/21/04		
	Spin Vaness	Inner Air	Outer Register	Spin Vaness	Inner Air	Outer Register	Spin Vaness	Inner Air	Outer Register
D1	3.75	1.5	7.1	3.75	1.5	7.1	3.75	1.5	8.0
D2	3.75	1.5	4.7	3.75	1.5	4.7	3.75	1.5	4.7
D3	3.75	1.5	4.0	3.75	1.5	5.0	3.75	1.5	4.5
D4	3.75	1.5	4.5	3.75	1.5	5.0	3.75	1.5	4.5
D5	3.75	1.5	6.3	3.75	1.5	6.3	3.75	1.5	7.0
D6	5.00	1.5	10.3	5.00	1.5	10.3	5.00	1.5	10.3
H1	3.00	1.5	9.1	3.75	1.5	9.3	3.75	1.5	9.3
H2	3.00	1.5	7.3	3.75	1.5	7.5	3.75	1.5	7.5
H3	3.00	1.5	6.6	3.75	1.5	6.8	3.75	1.5	6.8
H4	3.00	1.5	6.7	3.75	1.5	6.9	3.75	1.5	6.9
H5	3.00	1.5	7.5	3.75	1.5	7.7	3.75	1.5	7.7
H6	3.00	1.5	9.5	3.75	1.5	9.5	3.75	1.5	9.5
C1	3.75	1.5	8.1	3.75	1.5	8.3	3.75	1.5	8.3
C2	3.75	1.5	6.5	3.75	1.5	6.7	3.75	1.5	6.7
C3	3.75	1.5	5.9	3.75	1.5	6.1	3.75	1.5	6.1
C4	3.75	1.5	6.0	3.75	1.5	6.2	3.75	1.5	6.2
C5	3.75	1.5	6.7	5.00	1.5	6.9	5.00	1.5	6.9
C6	3.75	1.5	8.5	3.75	1.5	8.5	3.75	1.5	8.5

G1	3.75	1.5	12.3	3.75	1.5	12.6	3.75	1.5	12.6
G2	3.75	1.5	9.9	3.75	1.5	10.2	3.75	1.5	10.2
G3	3.75	1.5	8.9	3.75	1.5	9.2	3.75	1.5	9.2
G4	3.75	1.5	9.1	3.75	1.5	9.4	3.75	1.5	9.4
G5	3.75	1.5	10.2	3.75	1.5	10.4	3.75	1.5	10.4
G6	3.75	1.5	12.9	3.75	1.5	12.9	3.75	1.5	12.9

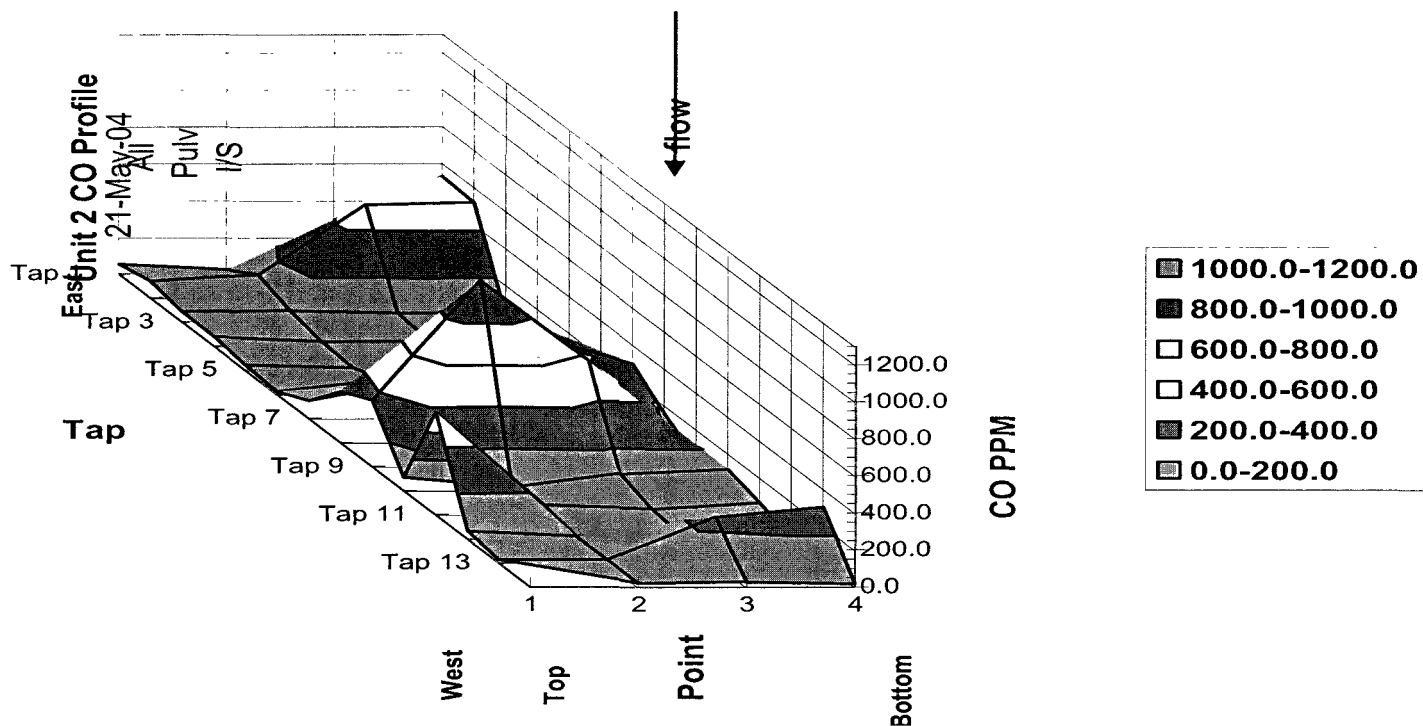


Fig 17 CO Profile 3D

U2 All Pulv I/s 5-21 04

CO Profile

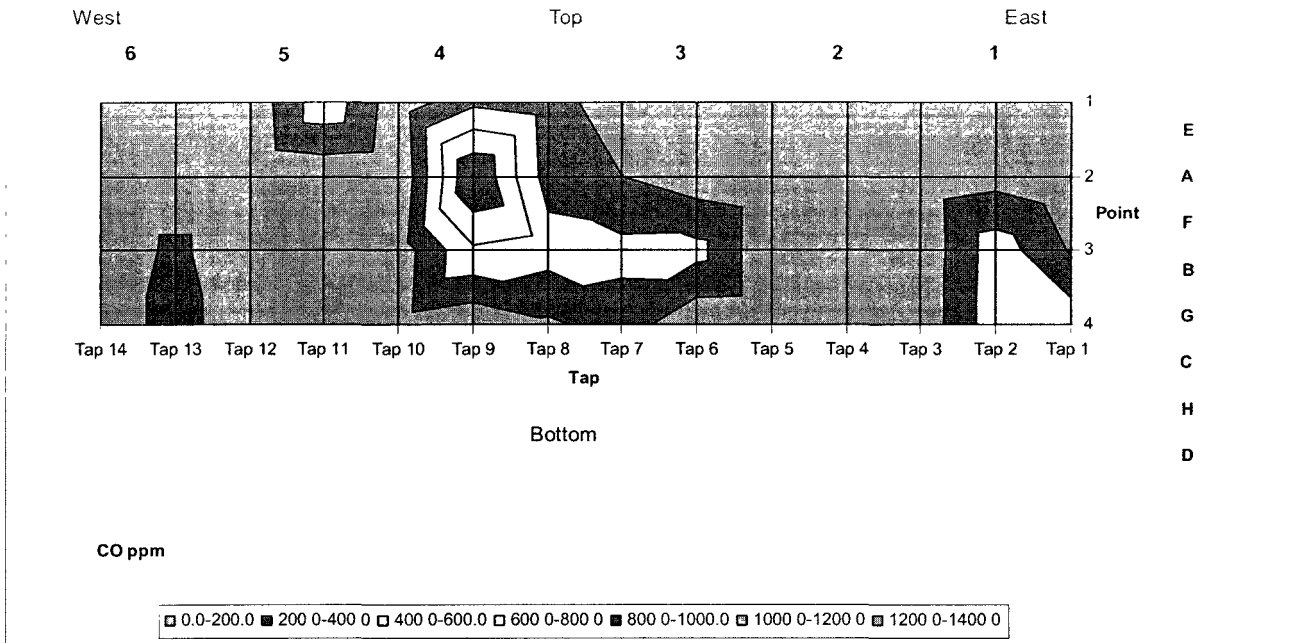


Fig 18 CO Profile 3D

East Unit 2 O2 Profile  
21-May-04  
All Pulv I/S

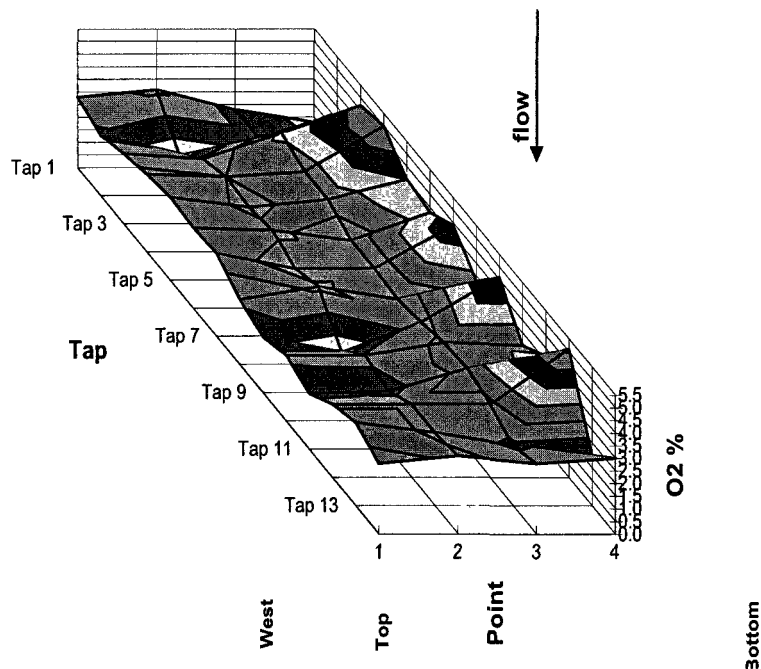


Fig 19 O2 Profile 3D

U2 All Pulv v/s 5-21-04

### O2 Profile

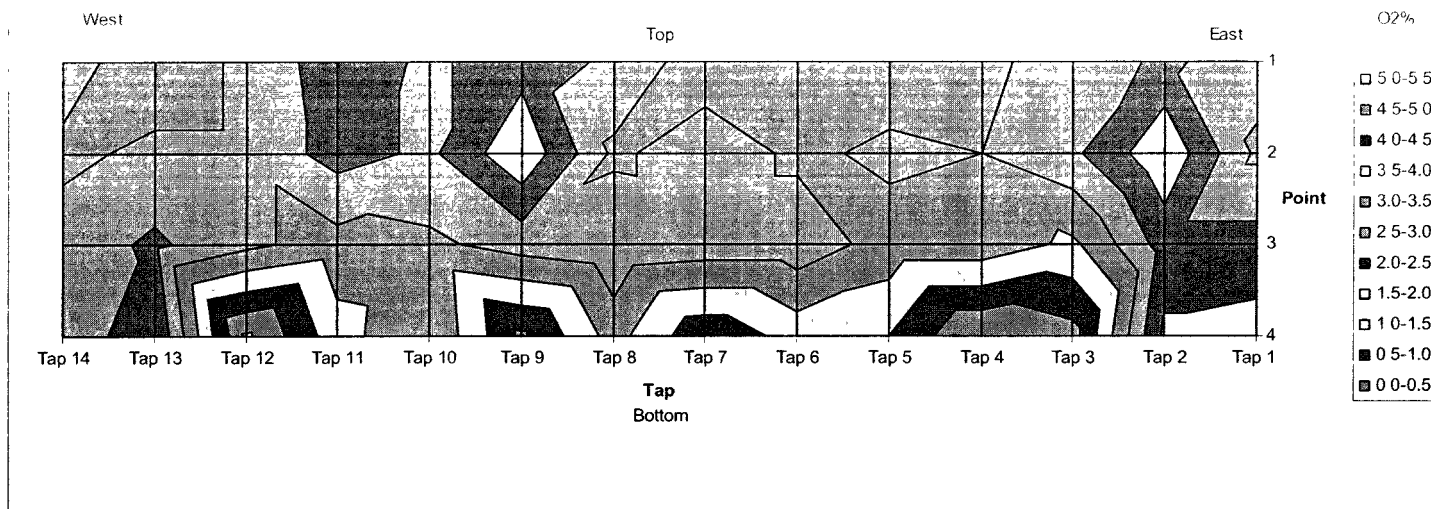


Fig 20 O2 Profile 2D

**Table 6: Overall CO and O2 for Recent Test**

Testing time	Ave. Grid O2	Ave. Grid CO
April 27 All I/S	3.34	33.395
April 27 All I/S	3.67	17.105
April 28 C O/S	3.78	380.49
April 28 D O/S	3.695	200.315
April 29 E O/S	3.19	662.525
April 29 A O/S	3.055	537.015
April 30 H O/S	3.52	172.555
April 30 H O/S	3.805	69.145
May 3 G O/S	2.985	830.835
May 3 G O/S	3.21	649.025
May 3 G O/S	3.335	595.9
May 4 B O/S	2.99	743.325
May 4 D O/S	3.15	691.06
May 4 D O/S	3.925	395.94
May 7 F O/S	3.48	614.3
May 18 All I/S	3.23	206
May 19 All I/S	3.3	104
May 20 F/O	3.5	250
May 21 All I/S	2.98	164

After this profile C mill was O/S and ABT engineers surveyed the burner flames close to west sidewall. G6's flame was in bad shape, no definition and flame is too short, ABT engineers closed D5 and D1, opened up H3 and H4 spin vanes from 3.75" to 4", Closed G1

and G6's inner air register from 1.5" to 1", open the spin vane to 4" to let more air go through. Open B1 and B6 outer register from 10.5 to 11.5, open B6 inner air to 2", open B1, B4, B6 spin vane to 4. Close B1 inner air to 1", open A4, F4 spin vane to 4.5".

Table 7 Burner Settings on May 21 2004

5/21/04				5/21/04	r11	c o/s
All Mill I/S	Spin Vanes	Inner Air	Outer Register	Spin	Inner	Outer Register
E1	3.75	1.5	6.5	Vanes	Air	
E2	3.75	1.5	5.3	3.75	1.5	6.51
E3	4.25	1.5	4.7	3.75	1.5	5.26
E4	4.50	1.5	4.8	4.25	1.5	4.73
E5	3.75	1.5	5.4	4.50	1.5	4.83
E6	3.75	1.5	6.6	3.75	1.5	5.36
A1	3.75	1.5	8.7	3.75	1.5	6.65
A2	3.75	1.5	7.0	3.75	1.5	8.74
A3	4.25	1.5	6.3	3.75	1.5	7.05
A4	4.25	1.5	6.5	4.25	1.5	6.34
A5	3.75	1.5	7.2	4.50	1.5	6.48
A6	3.75	1.5	8.9	3.75	1.5	7.20
F1	3.75	1.5	6.8	3.75	1.5	8.92
F2	3.75	1.5	5.4	3.75	1.5	6.75
F3	4.25	1.5	4.9	3.75	1.5	5.45
F4	4.25	1.5	5.0	4.25	1.5	4.90
F5	3.75	1.5	5.6	4.50	1.5	5.01
F6	3.75	1.5	6.9	3.75	1.5	5.56
B1	3.75	1.5	10.3	3.75	1.5	6.89
B2	3.75	1.5	8.3	4.00	1.0	11.50
B3	3.75	1.5	7.5	3.75	1.5	8.29
B4	3.75	1.5	7.6	3.75	1.5	7.46
B5	3.75	1.5	8.5	4.00	1.5	7.62
B6	3.75	1.5	10.5	3.75	1.5	8.47
D1	3.75	1.5	8.0	3.75	1.5	7.50
D2	3.75	1.5	4.7	3.75	1.5	4.70
D3	3.75	1.5	4.5	3.75	1.5	4.50
D4	3.75	1.5	4.5	3.75	1.5	4.50
D5	3.75	1.5	7.0	3.75	1.5	6.50
D6	5.00	1.5	10.3	5	1.5	10.30
H1	3.75	1.5	9.3	3.75	1.5	9.35
H2	3.75	1.5	7.5	3.75	1.5	7.54
H3	3.75	1.5	6.8	4	1.5	6.78
H4	3.75	1.5	6.9	4	1.5	6.93
H5	3.75	1.5	7.7	3.75	1.5	7.70
H6	3.75	1.5	9.5	3.75	1.5	9.54
C1	3.75	1.5	8.3	3.75	1.5	8.34
C2	3.75	1.5	6.7	3.75	1.5	6.73
C3	3.75	1.5	6.1	3.75	1.5	6.05
C4	3.75	1.5	6.2	3.75	1.5	6.18
C5	5.00	1.5	6.9	5	1.5	6.87
C6	3.75	1.5	8.5	3.75	1.5	8.51
G1	3.75	1.5	12.6	4	1	13.00
G2	3.75	1.5	10.2	3.75	1.5	10.20

G3	3.75	1.5	9.2	3.75	1.5	9.18
G4	3.75	1.5	9.4	3.75	1.5	9.37
G5	3.75	1.5	10.4	3.75	1.5	10.41
G6	3.75	1.5	12.9	4.0	1.0	13.00

May 21<sup>st</sup>  
C mill O/S

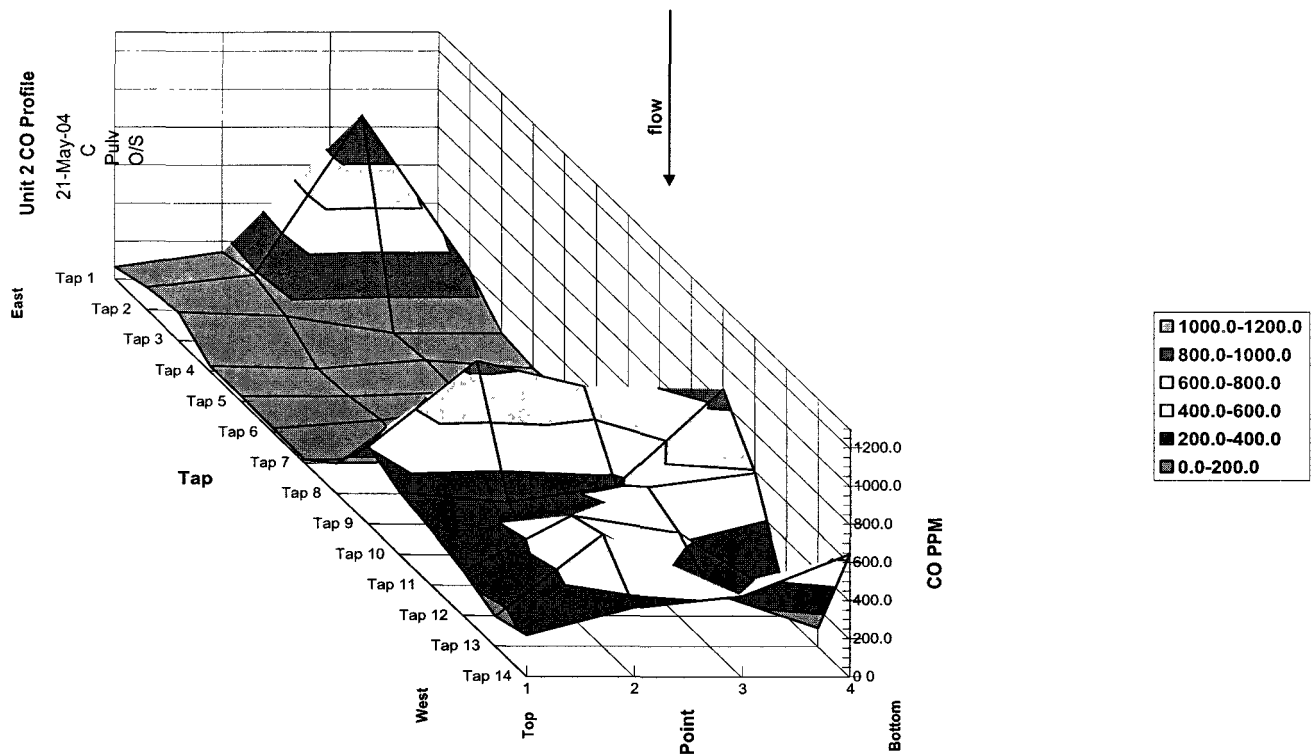


Fig 21 CO Profile 3D

U2 C Pulv o/s 5-21-04

CO Profile

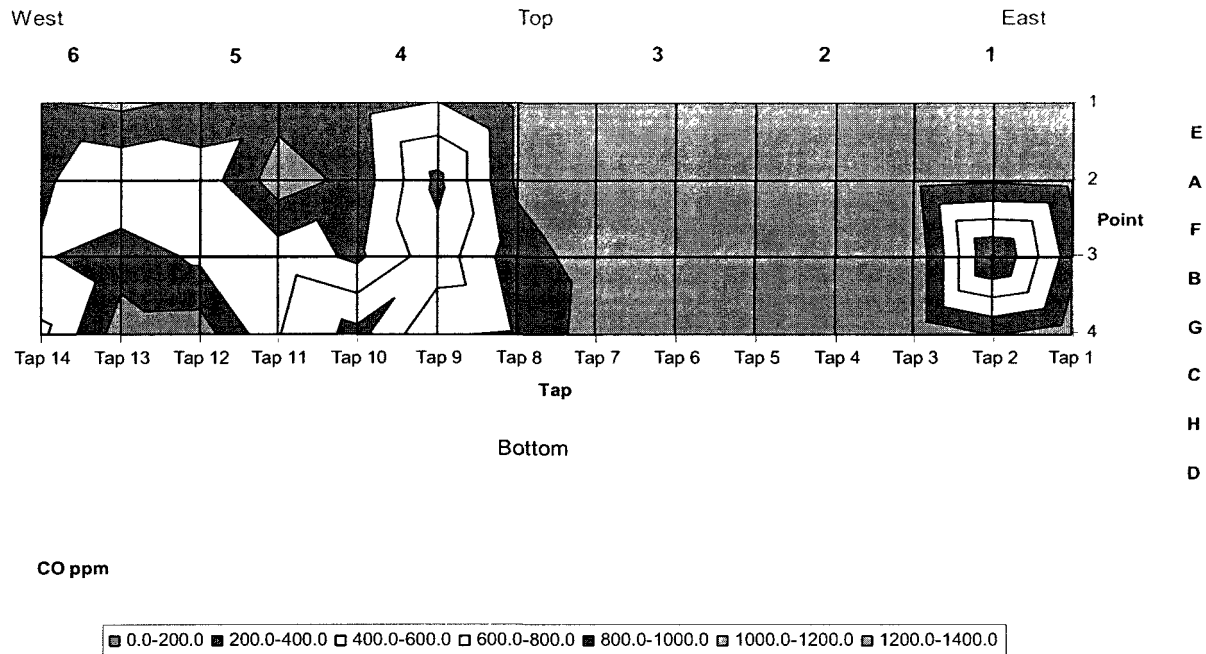


Fig 22 CO Profile 2D

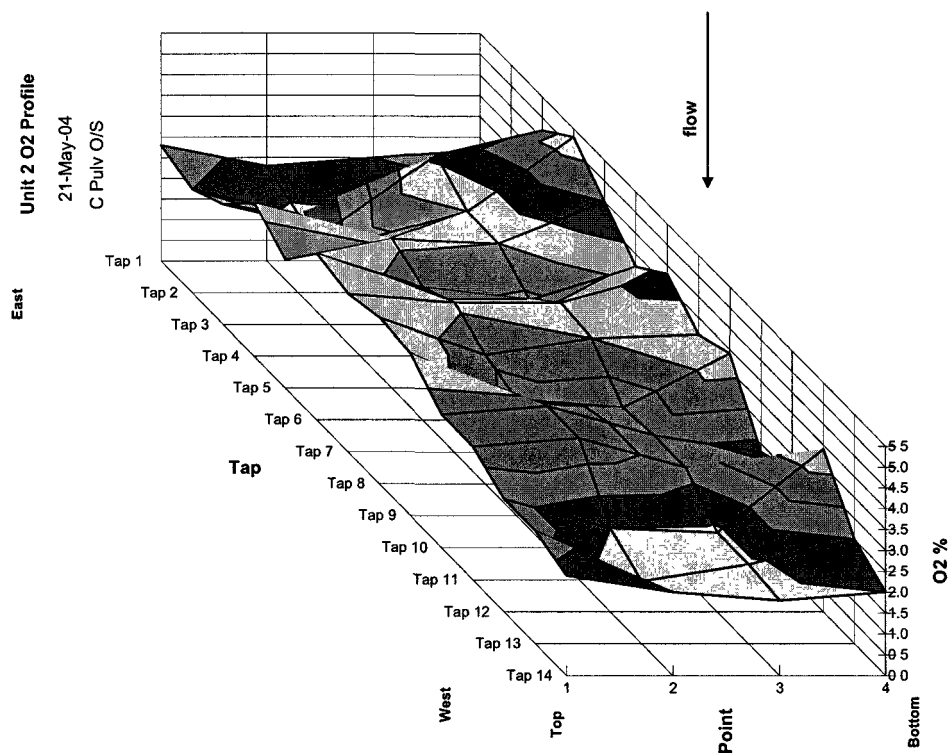


Fig 23 O2 Profile 3D



O2 Profile

U2 C PWS/s 5 21-04

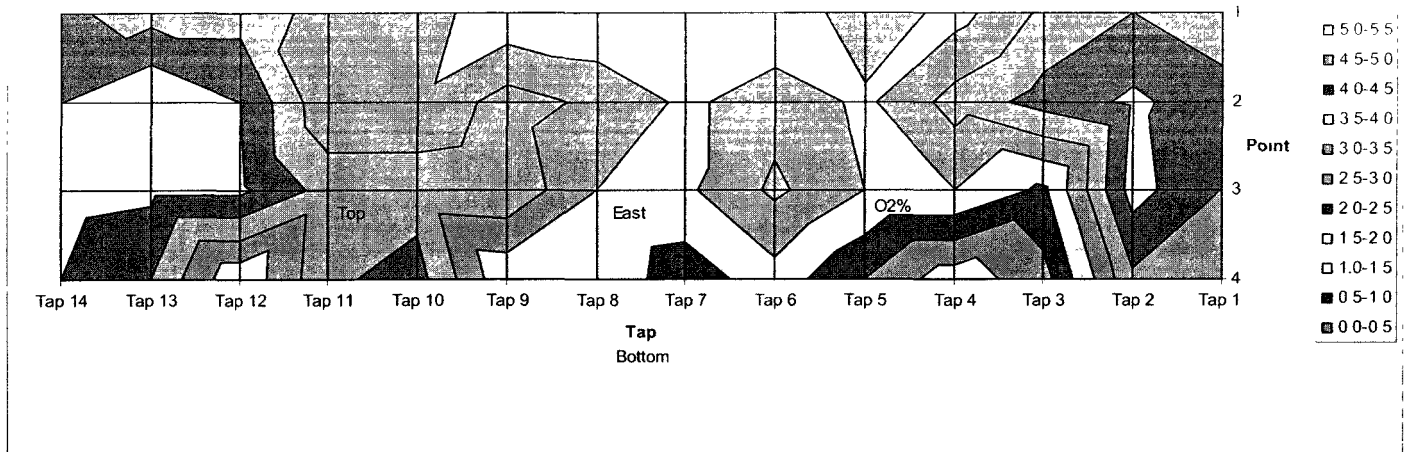


Fig 24 O2 Profile 2D

May 22<sup>nd</sup> C mill O/S in the morning.

B1 was starved for air and looked smokey. ABT closed its inner zone damper to 0.5", opened spin van to 4", and open outer register to 14". Flame brightened, smoke was gone.

Table 8: Co on May 22nd 2004

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	960.0	1006.0	181.0	126.0	87.0	109.0	153.0	265.0	421.0	211.0	209.0	90.0	85.0	46.0
2	829.0	1218.0	291.0	186.0	150.0	223.0	339.0	256.0	956.0	158.0	122.0	96.0	83.0	26.0
3	202.0	580.0	50.0	107.0	109.0	1055.0	1176.0	1228.0	1022.0	119.0	653.0	321.0	174.0	172.0
4	2.8	170.0	68.0	158.0	268.0	1218.0	1218.0	522.0	859.0	1228.0	1228.0	548.0	137.0	144.0

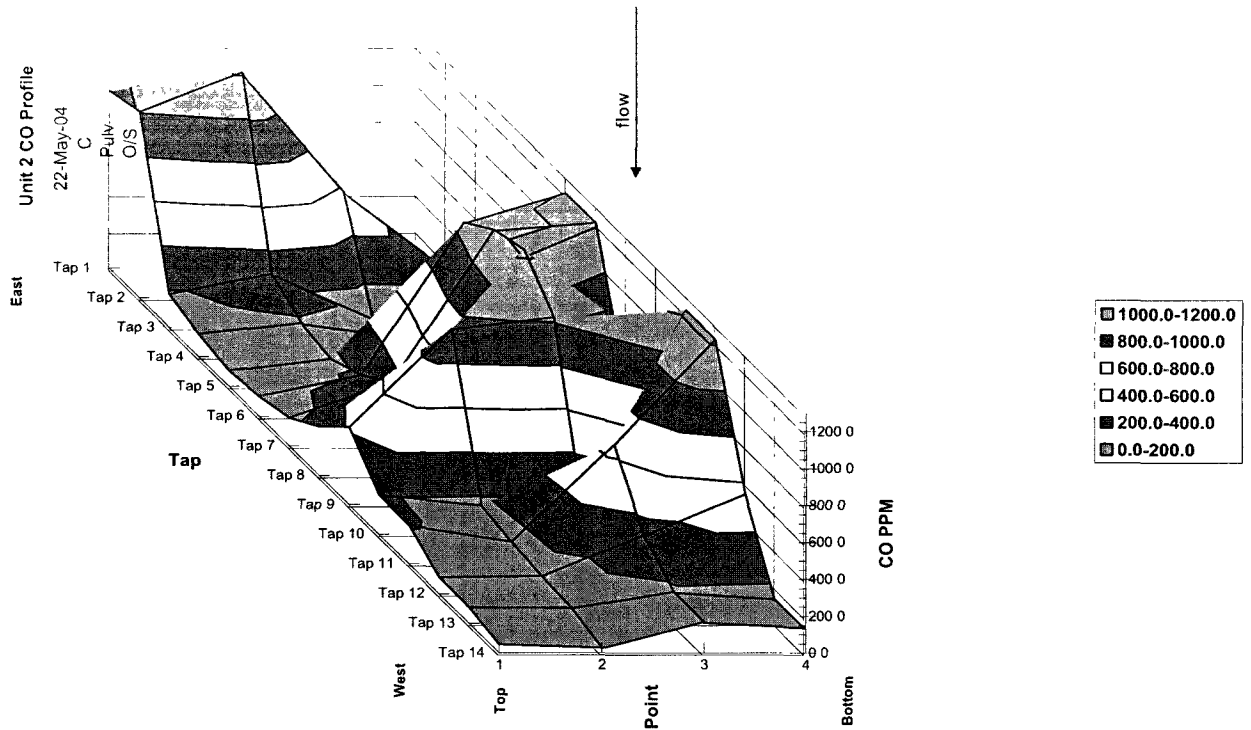


Fig 25 CO Profile 3D

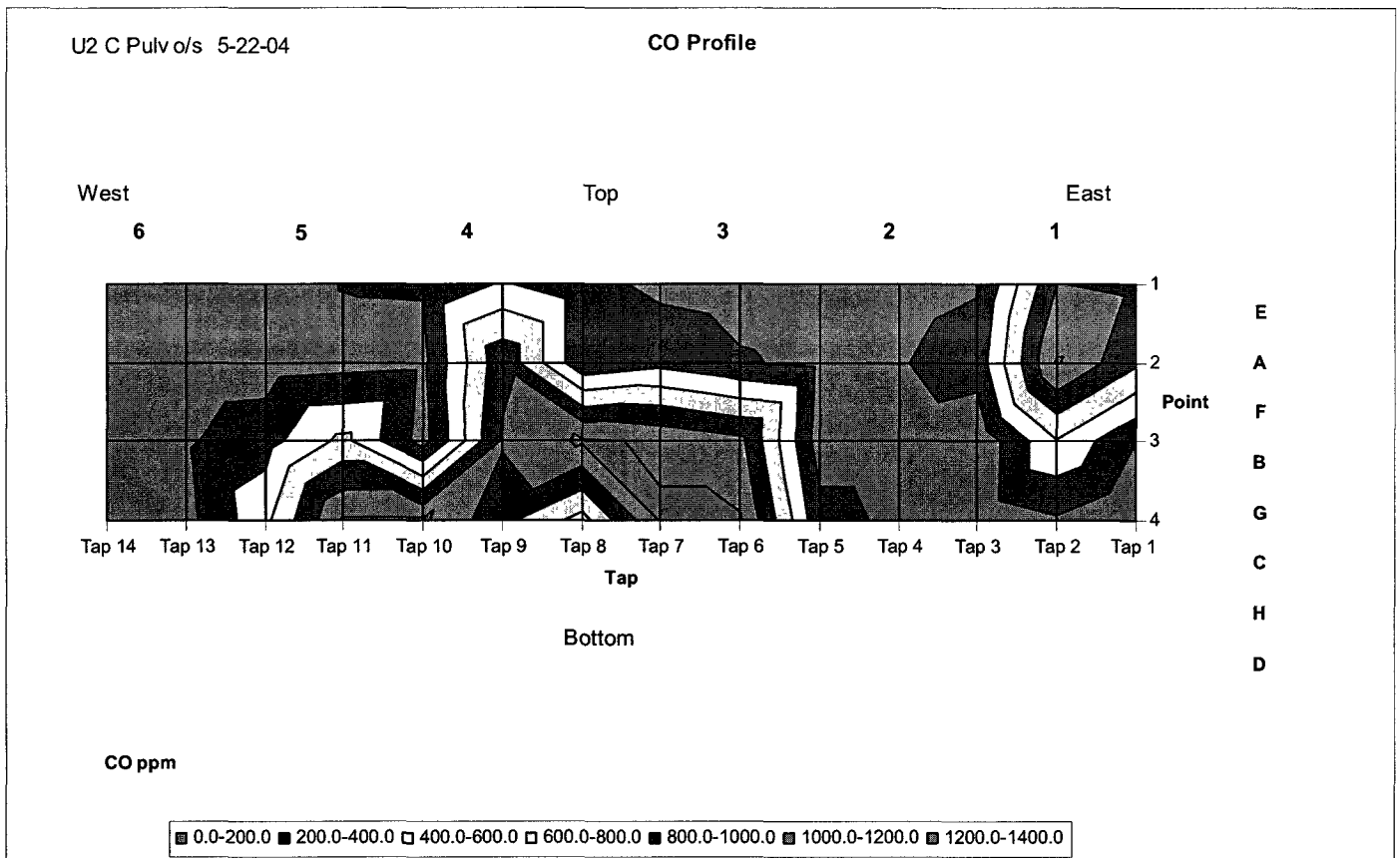


Fig 26 CO Profile 3D

Table 9: O<sub>2</sub> Readings on May 22, 2004

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1.5	1.5	2.7	3.1	3.0	3.3	3.6	3.8	4.0	3.8	3.6	2.9	2.9	3.1
2	1.6	0.8	2.3	2.8	3.0	3.3	3.4	3.7	3.1	3.6	3.7	2.7	2.4	2.9
3	2.3	3.3	4.8	4.7	3.3	2.4	2.6	3.1	2.8	3.9	3.2	2.9	2.5	2.7
4	2.8	3.3	5.6	4.9	3.6	2.3	2.2	4.5	3.1	2.2	2.7	3.5	3.0	2.4

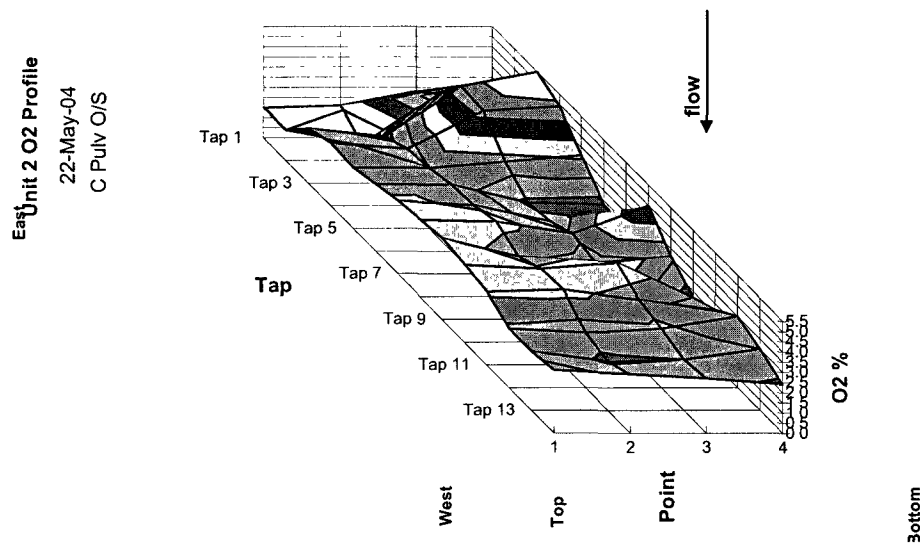


Fig 27 O<sub>2</sub> Profile 3D

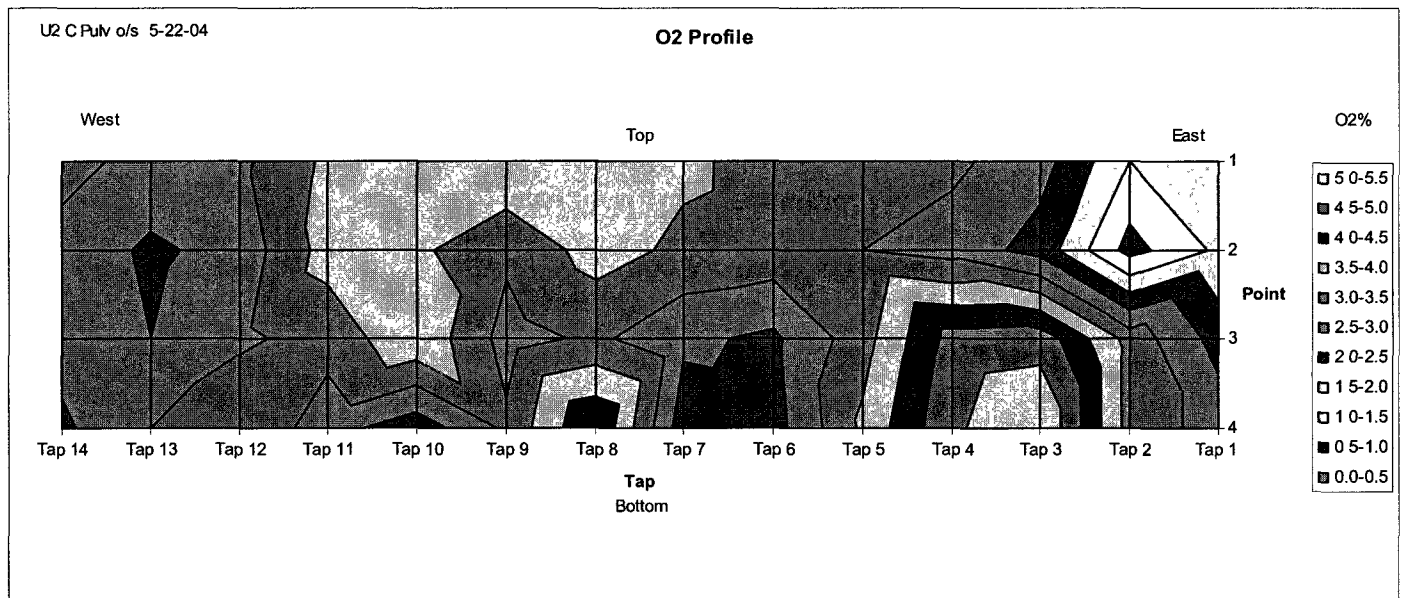


Fig 28 O<sub>2</sub> Profile 3D

May 22<sup>nd</sup> afternoon A mill O/S Same burner Settings

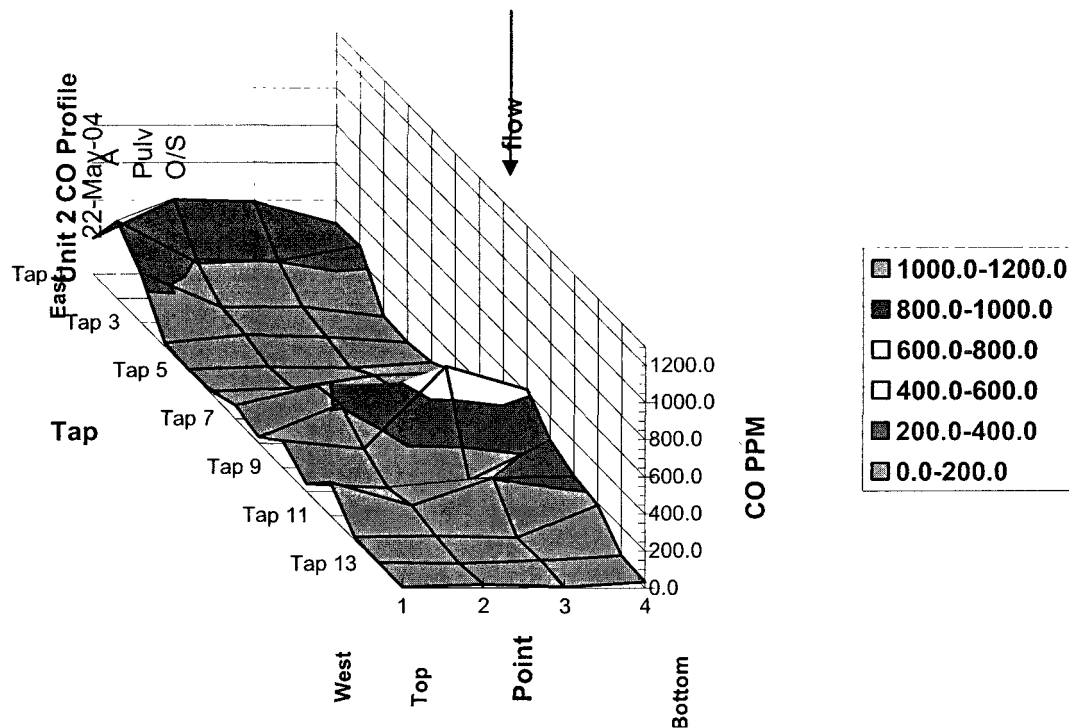


Fig 29 CO Profile 3D

U2 A Pulv o/s 5-22-04

CO Profile

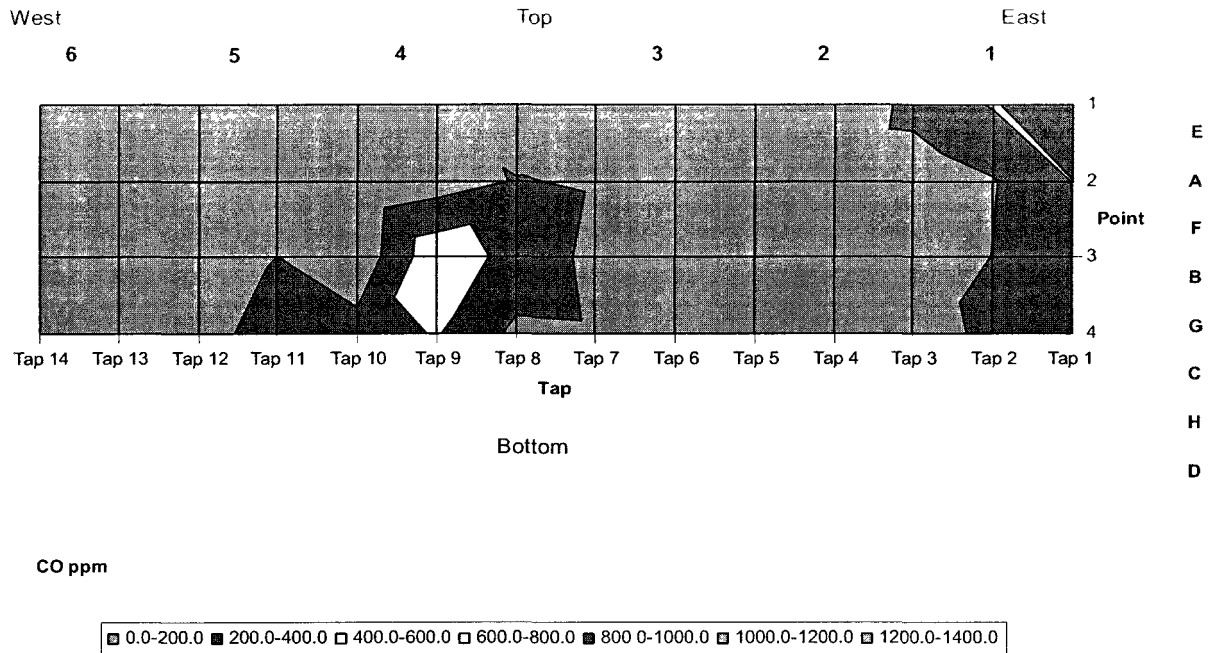


Fig 30 CO Profile 2D

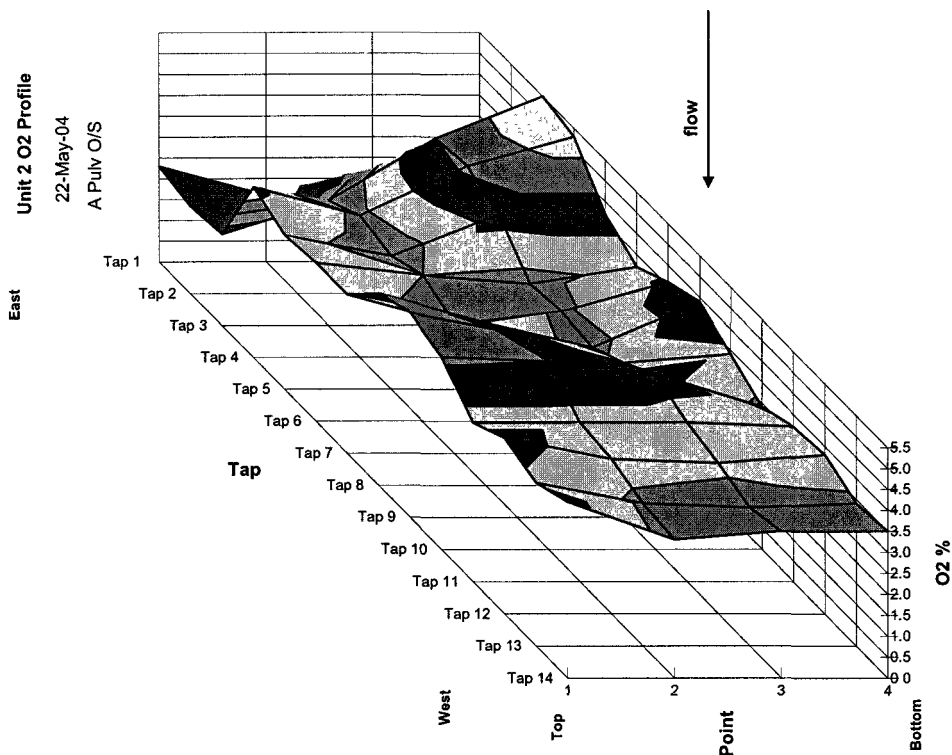


Fig 31 O2 Profile 3D

U2 A Pulv o/s 5-22-04

O2 Profile

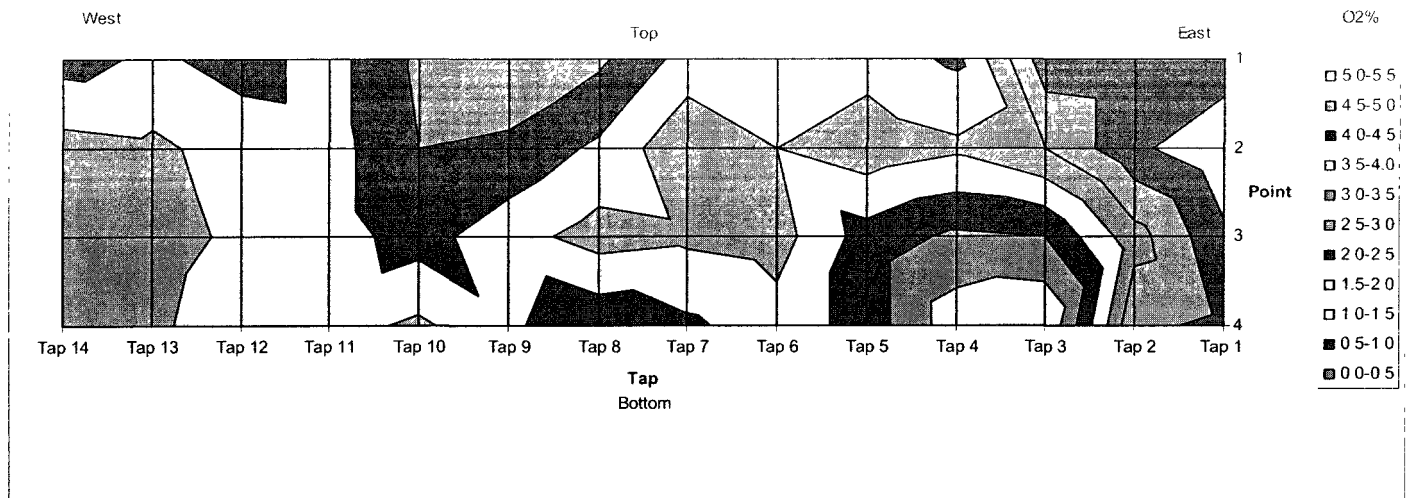


Fig 32 CO Profile 2D

Table 10: Overall Testing results

Testing time	Ave. Grid O2	Ave. Grid CO
May18All I/S	3.23	206
May19All I/S	3.3	104
May20 F/O	3.5	250
May21 All I/S	2.98	164
May21 C O/S	3.04	249
May22 C O/S	3.08	422
May22 A O/S	3.64	130

May 23<sup>rd</sup> H mill O/S

As found condition

Table 11: CO grid reading

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	29.0	35.0	27.0	71.0	100.0	172.0	333.0	96.0	38.0	46.0	21.0	19.0	32.0	43.0
2	35.0	8.0	72.0	7.0	15.0	140.0	360.0	69.0	84.0	8.0	6.0	7.0	7.0	19.0
3	67.0	32.0	31.0	95.0	130.0	1218.0	1218.0	1228.0	1227.0	205.0	361.0	5.0	27.0	95.0
4	180.0	145.0	1070.0	1218.0	1218.0	1218.0	1218.0	1228.0	1227.0	475.0	285.0	206.0	112.0	94.0

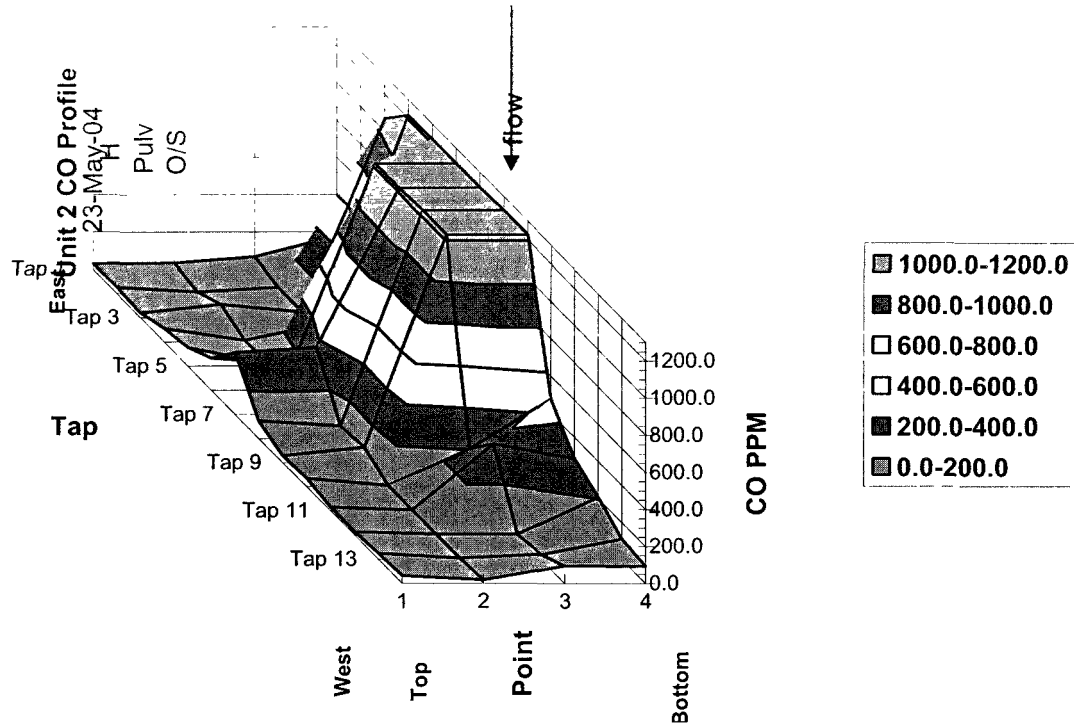


Fig 33 CO Profile 3D

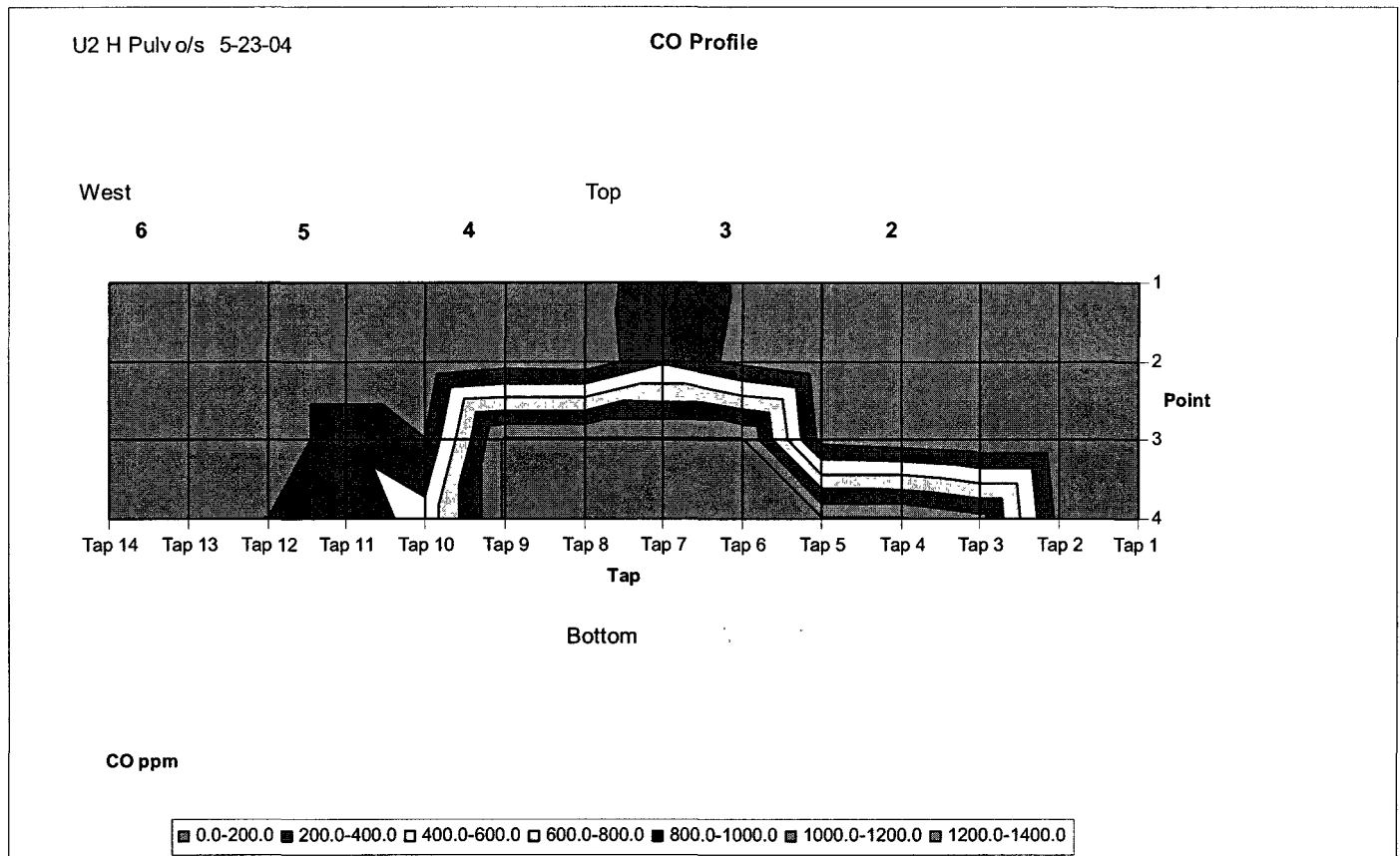


Fig 34 CO Profile 3D

Table 12: O<sub>2</sub> grid reading

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	3.5	3.3	3.2	3.5	3.5	3.4	3.7	3.9	4.7	4.4	4.2	3.6	3.8	3.5
2	3.1	2.6	3.3	3.7	3.2	2.9	2.8	4.4	4.2	4.5	4.3	4.4	3.3	3.6
3	3.5	3.0	4.4	3.6	3.8	1.8	2.0	2.0	2.7	4.1	4.8	3.6	3.6	3.6
4	3.7	3.5	3.9	2.8	2.5	1.0	0.7	1.3	2.1	2.8	3.5	5.4	4.6	4.5

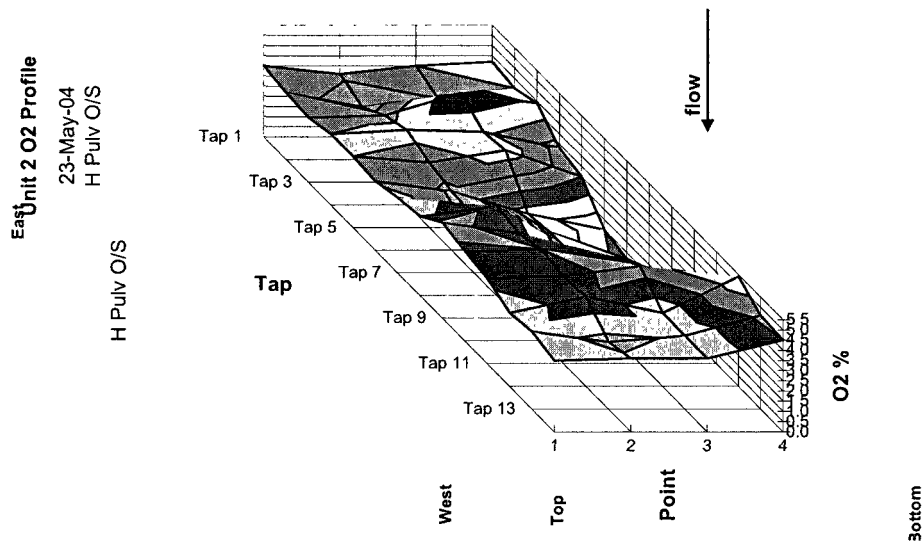


Fig 35 O<sub>2</sub> Profile 3D

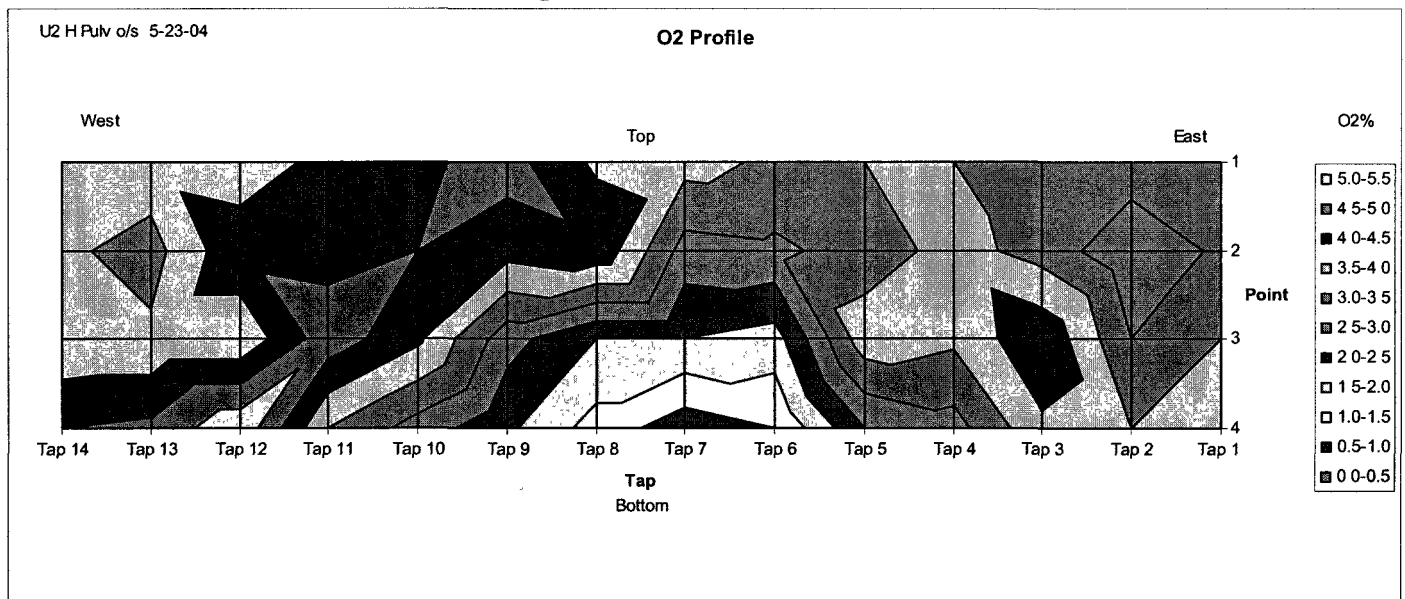


Fig 36 CO Profile 2D



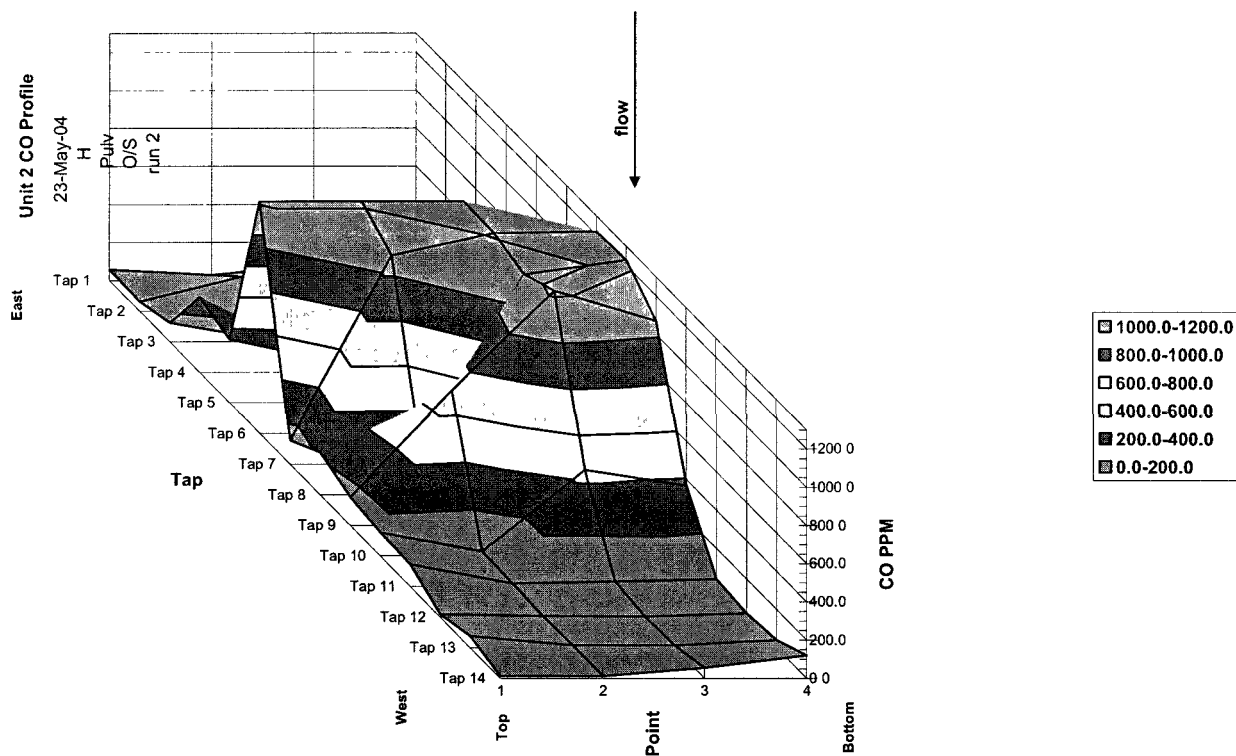
CO was forced to the center by opening the side burners.

**Table 13: Burner settings**

5/21/04	r11 Spin	c o/s Inner	Outer	5/23/04	r12 Spin	Inner	H O/S Run2 Outer
E1	3.75	1.5	6.5	E1	3.75	1.5	6.5
E2	3.75	1.5	5.3	E2	3.75	1.5	5.1
E3	4.25	1.5	4.7	E3	4.25	1.5	4.6
E4	4.50	1.5	4.8	E4	4.5	1.5	4.7
E5	3.75	1.5	5.4	E5	3.75	1.5	5.4
E6	3.75	1.5	6.6	E6	4	0.5	12.0
A1	3.75	1.5	8.7	A1	3.75	1.5	8.6
A2	3.75	1.5	7.0	A2	3.75	1.5	6.8
A3	4.25	1.5	6.3	A3	4.25	1.5	6.1
A4	4.50	1.5	6.5	A4	4.25	1.5	6.3
A5	3.75	1.5	7.2	A5	3.75	1.5	7.1
A6	3.75	1.5	8.9	A6	4	0.5	10.0
F1	3.75	1.5	6.8	F1	4	0.5	10.0
F2	3.75	1.5	5.4	F2	3.75	1.5	5.4
F3	4.25	1.5	4.9	F3	4.25	1.5	4.8
F4	4.50	1.5	5.0	F4	4.25	1.5	5.2
F5	3.75	1.5	5.6	F5	3.75	1.5	5.6
F6	3.75	1.5	6.9	F6	4	0.5	10.0
B1	4.00	1.0	11.5	B1	5	0.5	14.0
B2	3.75	1.5	8.3	B2	3.75	1.5	8.0
B3	3.75	1.5	7.5	B3	3.75	1.5	7.1
B4	4.00	1.5	7.6	B4	3.75	1.5	7.6
B5	3.75	1.5	8.5	B5	3.75	1.5	8.4
B6	4.00	2.0	11.5	B6	4	0.5	14.0
D1	3.75	1.5	7.5	D1	3.75	1.5	8.0
D2	3.75	1.5	4.7	D2	3.5	1.5	4.7
D3	3.75	1.5	4.5	D3	3.5	1.5	4.5
D4	3.75	1.5	4.5	D4	3.75	1.5	4.8
D5	3.75	1.5	6.5	D5	3.75	1.5	7.0
D6	5	1.5	10.3	D6	5	1.5	10.3
H1	3.75	1.5	9.3	H1	3.75	1.5	9.7
H2	3.75	1.5	7.5	H2	3.75	1.5	7.4
H3	4	1.5	6.8	H3	3.75	1.5	6.6
H4	4	1.5	6.9	H4	3.75	1.5	6.8
H5	3.75	1.5	7.7	H5	3.75	1.5	7.7
H6	3.75	1.5	9.5	H6	3.75	1.5	9.5
C1	3.75	1.5	8.3	C1	3.75	1.5	9.0
C2	3.75	1.5	6.7	C2	3.75	1.5	6.7
C3	3.75	1.5	6.1	C3	3.75	1.5	6.0
C4	3.75	1.5	6.2	C4	3.75	1.5	6.2
C5	5	1.5	6.9	C5	5	1.5	7.0
C6	3.75	1.5	8.5	C6	5	0.5	11.0
G1	4	1	13.0	G1	4	1	12.6
G2	3.75	1.5	10.2	G2	3.75	1.5	10.0
G3	3.75	1.5	9.2	G3	3.75	1.5	8.9
G4	3.75	1.5	9.4	G4	3.75	1.5	9.2
G5	3.75	1.5	10.4	G5	4	0.5	11.0
G6	4.0	1.0	13.0	G6	4	0.5	14.0

**Table 14: CO grid reading**

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	58.0	50.0	99.0	394.0	332.0	1217.0	124.0	221.0	148.0	124.0	117.0	15.0	61.0	14.0
2	29.0	180.0	4.7	36.0	218.0	1217.0	1092.0	200.0	705.0	23.0	16.0	6.0	14.0	11.0
3	84.0	41.0	20.0	73.0	534.0	1217.0	1210.0	1153.0	1228.0	451.0	27.0	4.0	13.0	56.0
4	142.0	123.0	66.0	46.0	326.0	456.0	1217.0	1228.0	1058.0	368.0	38.0	21.0	40.0	120.0



**Fig 37 CO Profile 3D**

U2 H Pulvo/s 5-23-04 run 2

CO Profile

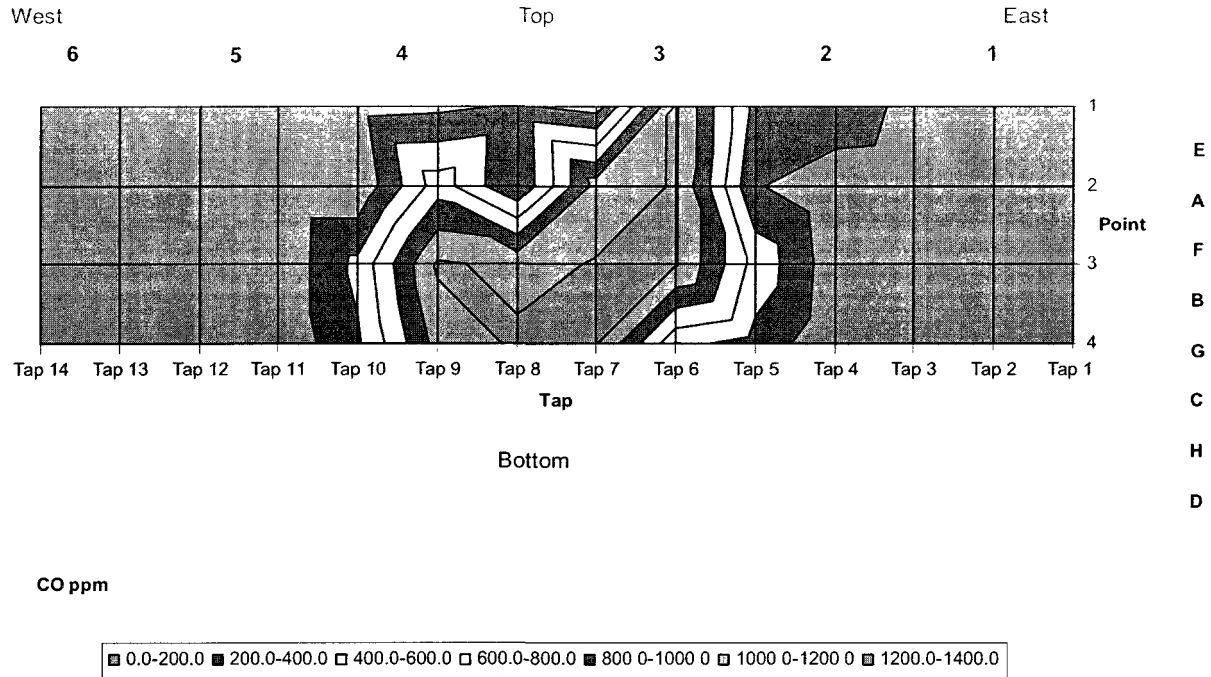


Fig 38 CO Profile 2D

Table 15: O2 grid reading

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	3.4	3.3	2.8	2.7	2.8	1.3	3.4	3.6	3.9	4.0	4.1	4.7	3.9	5.0
2	3.2	1.9	3.1	2.6	2.7	1.1	3.2	3.9	2.9	3.4	4.4	4.5	4.4	5.5
3	3.2	3.1	3.9	4.1	3.3	1.2	2.7	3.2	2.1	3.0	5.4	4.9	5.0	5.6
4	3.6	3.3	4.7	5.1	4.1	2.8	3.2	2.7	3.6	4.1	5.7	5.9	5.2	5.4

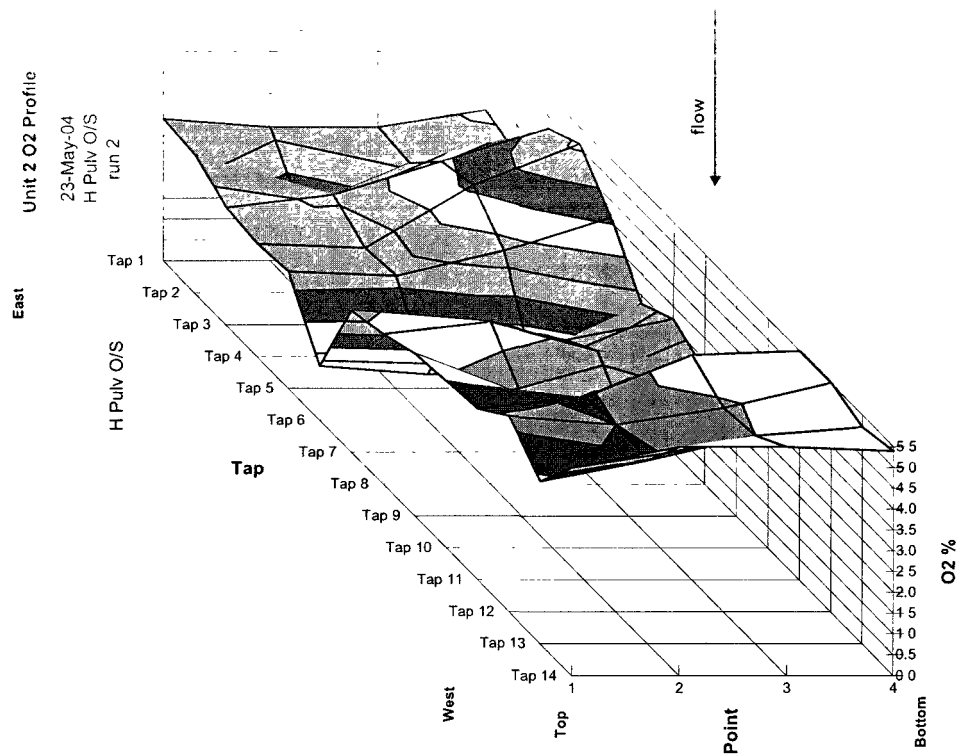


Fig 39 O2 Profile 3D

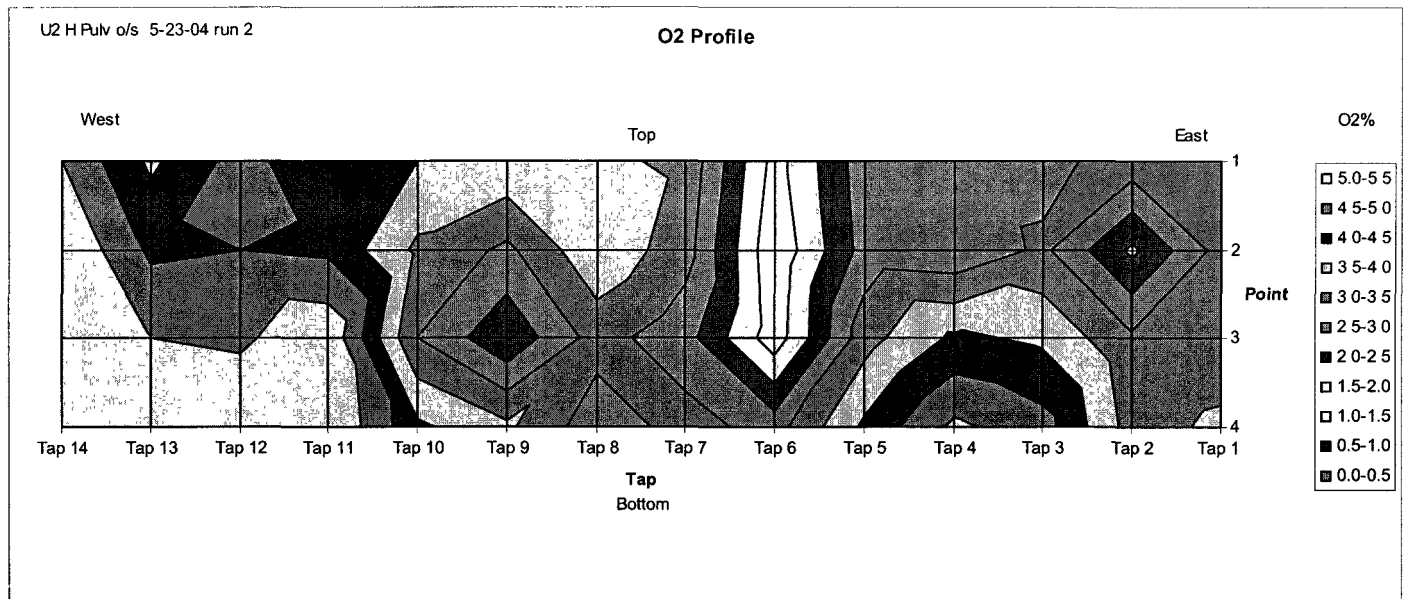


Fig 40 O2 Profile 2D

We closed H row middle burners and close the side burners to supply more air to the middle ones.

**Table 16: Burner Settings**

5/23/04	r12	H O/S	Run2	5/23/04	r13	H O/S	Run3
	<b>Spin</b>	<b>Inner</b>	<b>Outer</b>		<b>Spin</b>	<b>Inner</b>	<b>Outer</b>
E1	3.75	1.5	6.5	E1	3.75	1.5	8.0
E2	3.75	1.5	5.1	E2	3.75	1.5	5.1
E3	4.25	1.5	4.6	E3	4.25	1.5	4.6
E4	4.5	1.5	4.7	E4	4.5	1.5	4.7
E5	3.75	1.5	5.4	E5	3.75	1.5	5.4
<u>E6</u>	4	0.5	12.0	<u>E6</u>	4	0.5	10.0
A1	3.75	1.5	8.6	A1	3.75	1.5	8.6
A2	3.75	1.5	6.8	A2	3.75	1.5	6.8
A3	4.25	1.5	6.1	A3	4.25	1.5	6.1
A4	4.25	1.5	6.3	A4	4.25	1.5	6.3
A5	3.75	1.5	7.1	A5	3.75	1.5	7.1
<u>A6</u>	4	0.5	10.0	<u>A6</u>	4	0.5	10.0
F1	4	0.5	10.0	F1	4	0.5	8.0
F2	3.75	1.5	5.4	F2	3.75	1.5	5.4
F3	4.25	1.5	4.8	F3	4.25	1.5	4.8
F4	4.25	1.5	5.2	F4	4.25	1.5	5.2
F5	3.75	1.5	5.6	F5	3.75	1.5	5.6
<u>F6</u>	4	0.5	10.0	<u>F6</u>	4	0.5	10.0
B1	5	0.5	14.0	B1	5	0.5	14.0
B2	3.75	1.5	8.0	B2	3.75	1.5	8.0
B3	3.75	1.5	7.1	B3	3.75	1.5	7.1
B4	3.75	1.5	7.6	B4	3.75	1.5	7.6
B5	3.75	1.5	8.4	B5	3.75	1.5	8.4
B6	4	0.5	14.0	B6	4	0.5	14.0
D1	3.75	1.5	8.0	D1	3.75	1.5	9.0
D2	3.5	1.5	4.7	D2	3.5	1.5	6.0
D3	3.5	1.5	4.5	D3	3.5	1.5	4.5
D4	3.75	1.5	4.8	D4	3.75	1.5	4.8
D5	3.75	1.5	7.0	D5	3.75	1.5	7.0
<b>D6</b>	5	1.5	10.3	<b>D6</b>	5	1.5	10.3
H1	3.75	1.5	9.7	H1	3.75	1.5	9.7
H2	3.75	1.5	7.4	H2	3.75	1.5	7.0
H3	3.75	1.5	6.6	H3	3.75	1.5	6.0
H4	3.75	1.5	6.8	H4	3.75	1.5	6.0
H5	3.75	1.5	7.7	H5	3.75	1.5	7.0
H6	3.75	1.5	9.5	H6	3.75	1.5	9.5
C1	3.75	1.5	9.0	C1	3.75	1.5	9.0
C2	3.75	1.5	6.7	C2	3.75	1.5	6.7
C3	3.75	1.5	6.0	C3	3.75	1.5	6.0
C4	3.75	1.5	6.2	C4	3.75	1.5	6.2
C5	5	1.5	7.0	C5	5	1.5	7.0
C6	5	0.5	11.0	C6	5	0.5	10.0
G1	4	1	12.6	G1	4	1	12.6
G2	3.75	1.5	10.0	G2	3.75	1.5	10.0
G3	3.75	1.5	8.9	G3	3.75	1.5	8.9
G4	3.75	1.5	9.2	G4	3.75	1.5	9.2
G5	4	0.5	11.0	G5	4	0.5	11.0
G6	4	0.5	14.0	G6	4	0.5	14.0

Table 17: CO grid reading

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	58.0	50.0	99.0	394.0	332.0	1217.0	124.0	221.0	148.0	124.0	117.0	15.0	61.0	14.0
2	29.0	180.0	4.7	36.0	218.0	1217.0	1092.0	200.0	705.0	23.0	16.0	6.0	14.0	11.0
3	84.0	41.0	20.0	73.0	534.0	1217.0	1210.0	1153.0	1228.0	451.0	27.0	4.0	13.0	56.0
4	142.0	123.0	66.0	46.0	326.0	456.0	1217.0	1228.0	1068.0	368.0	38.0	21.0	40.0	120.0

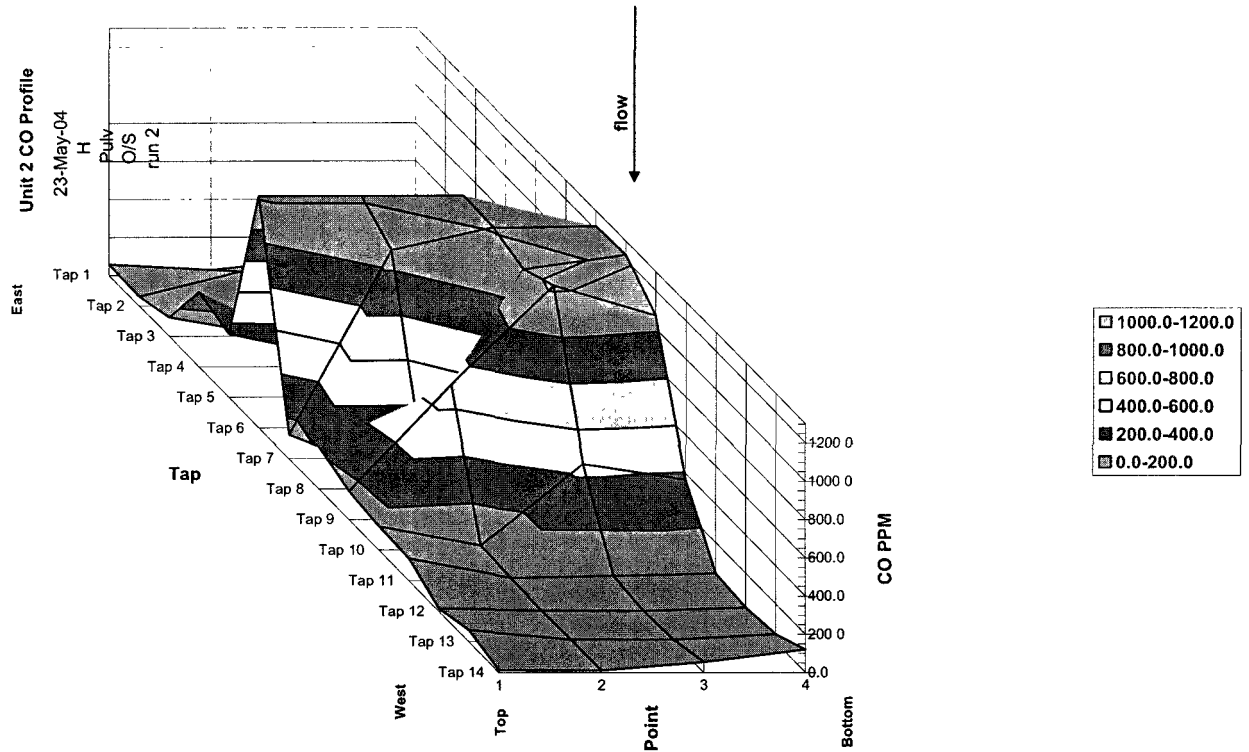


Fig 41 CO Profile 3D

U2 H Pulv o/s 5-23-04 run 2

CO Profile

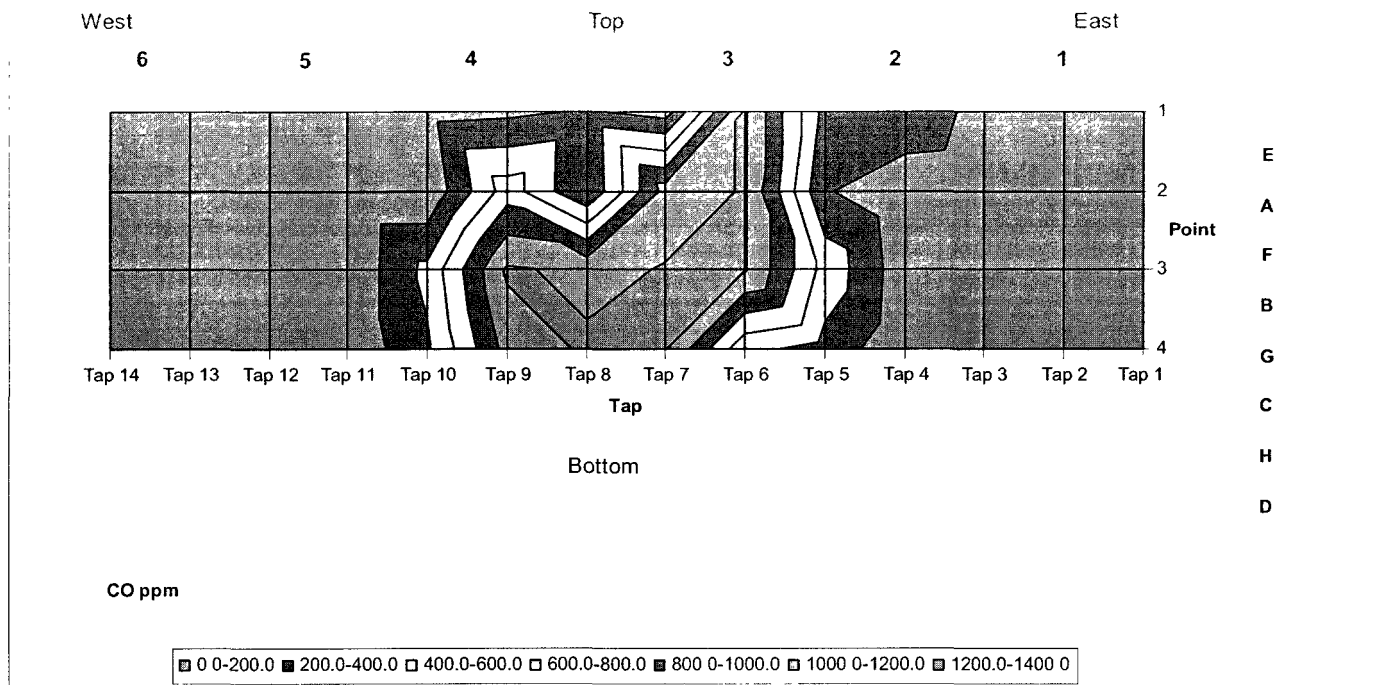


Fig 42 CO Profile 2D

Table 18: O2 grid reading

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	2.6	2.7	3.2	3.3	3.1	3.7	3.0	4.2	3.6	4.6	4.0	5.4	4.8	5.0
2	2.3	2.6	2.6	3.6	3.4	2.5	2.5	4.4	3.2	3.8	4.3	4.5	4.9	4.8
3	2.6	2.5	3.6	4.0	4.0	1.7	2.7	2.7	2.6	3.3	4.7	5.3	4.4	5.0
4	2.9	2.8	4.8	4.7	4.4	3.1	3.7	3.0	3.2	3.9	4.8	6.0	5.0	5.0

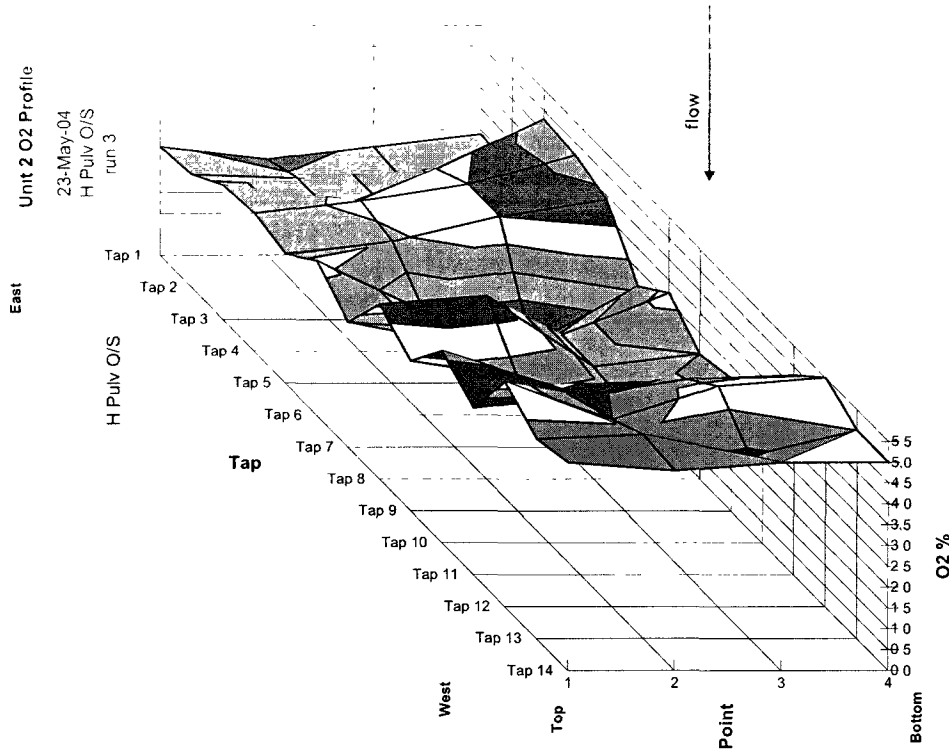


Fig 43 O2 Profile 3D

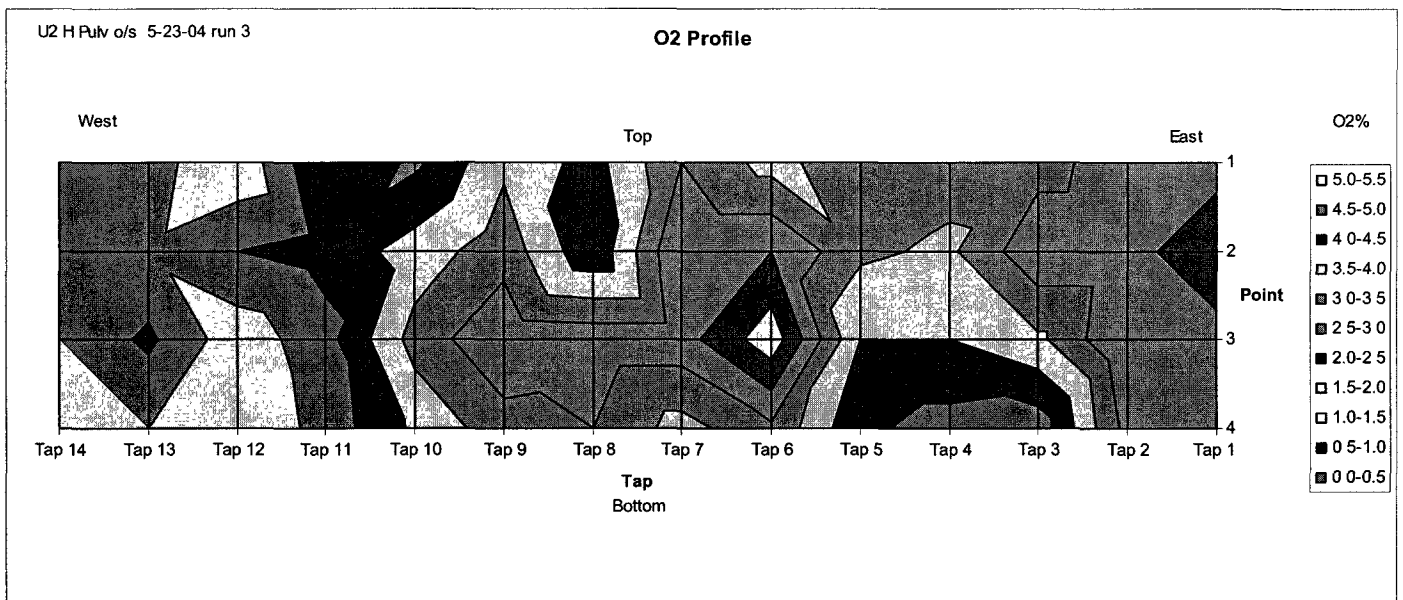


Fig 44 O2 Profile 2D

May 24<sup>th</sup> : At first Cooling air for burners O/S is 28% damper opening position, 10% opening is the limit for operation in DCS, ABT engineers asked power plant engineers to reduce the cooling air to minimum (10% opening).



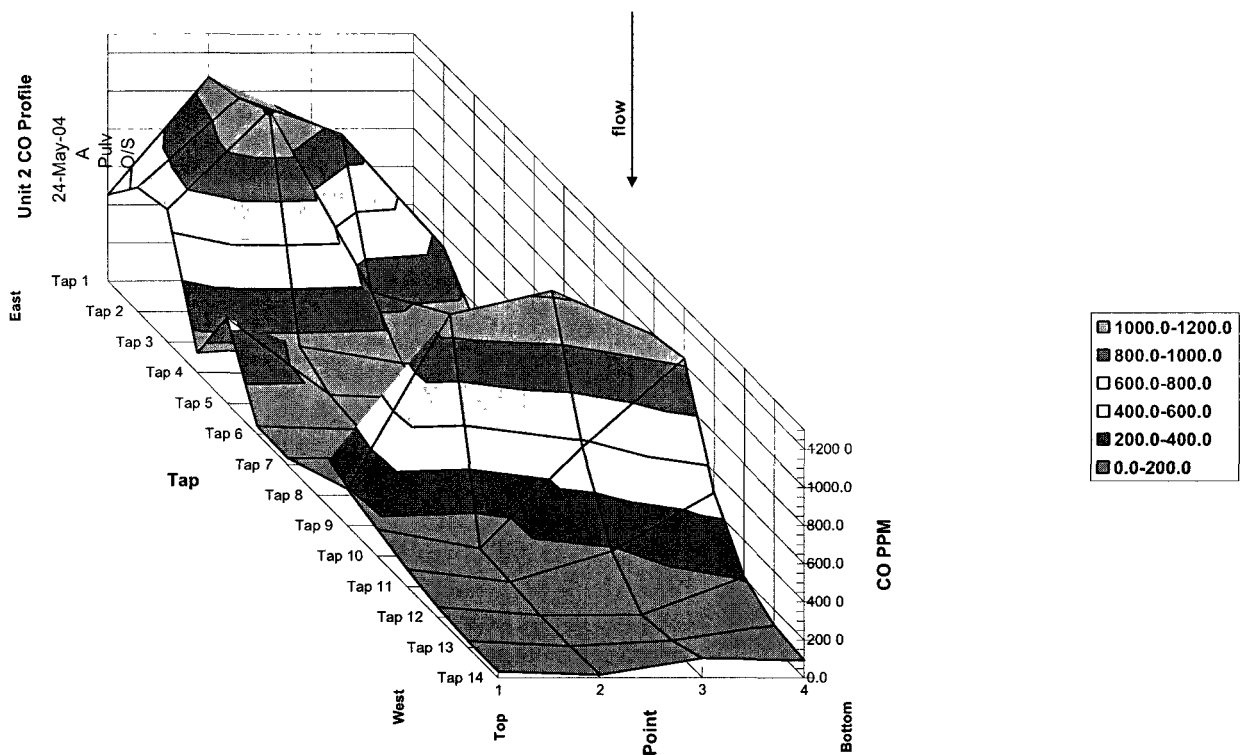
**Table 19: Burner Settings for Last profile and Current Profile**

5/23/04	r13	H O/S	Run3	5/24/04	r14	A mill O/S	
	Spin	Inner	Outer		Spin	Inner	Outer
E1	3.75	1.5	8.0	E1	3.75	1.5	8.0
E2	3.75	1.5	5.1	E2	3.75	1.5	5.1
E3	4.25	1.5	4.6	E3	4.25	1.5	5.5
E4	4.5	1.5	4.7	E4	4.5	1.5	5.5
E5	3.75	1.5	5.4	E5	3.75	1.5	5.4
E6	4	0.5	10.0	E6	4	0.5	10.0
A1	3.75	1.5	8.6	A1	3.75	1.5	8.6
A2	3.75	1.5	6.8	A2	3.75	1.5	6.8
A3	4.25	1.5	6.1	A3	4.25	1.5	6.1
A4	4.25	1.5	6.3	A4	4.25	1.5	6.3
A5	3.75	1.5	7.1	A5	3.75	1.5	7.1
A6	4	0.5	10.0	A6	4	0.5	10.0
F1	4	0.5	8.0	F1	4	0.5	8.0
F2	3.75	1.5	5.4	F2	3.75	1.5	5.4
F3	4.25	1.5	4.8	F3	4.25	1.5	4.8
F4	4.25	1.5	5.2	F4	4.25	1.5	5.2
F5	3.75	1.5	5.6	F5	3.75	1.5	5.6
F6	4	0.5	10.0	F6	4	0.5	10.0
B1	5	0.5	14.0	B1	5	0.5	14.0
B2	3.75	1.5	8.0	B2	3.75	1.5	9.0
B3	3.75	1.5	7.1	B3	3.75	1.5	9.0
B4	3.75	1.5	7.6	B4	3.75	1.5	9.0
B5	3.75	1.5	8.4	B5	3.75	1.5	9.0
B6	4	0.5	14.0	B6	4	0.5	14.0
D1	3.75	1.5	9.0	D1	3.75	1.5	9.0
D2	3.5	1.5	6.0	D2	3.5	1.5	6.0
D3	3.5	1.5	4.5	D3	3.5	1.5	5.5
D4	3.75	1.5	4.8	D4	3.75	1.5	5.5
D5	3.75	1.5	7.0	D5	3.75	1.5	7.0
D6	5	1.5	10.3	D6	5	1.5	10.3
H1	3.75	1.5	9.7	H1	3.75	1.5	9.7
H2	3.75	1.5	7.0	H2	3.75	1.5	7.0
H3	3.75	1.5	6.0	H3	3.75	1.5	6.0
H4	3.75	1.5	6.0	H4	3.75	1.5	6.0
H5	3.75	1.5	7.0	H5	3.75	1.5	7.0
H6	3.75	1.5	9.5	H6	3.75	1.5	9.5
C1	3.75	1.5	9.0	C1	3.75	1.5	9.0
C2	3.75	1.5	6.7	C2	3.75	1.5	6.7
C3	3.75	1.5	6.0	C3	3.75	1.5	6.0
C4	3.75	1.5	6.2	C4	3.75	1.5	6.2
C5	5	1.5	7.0	C5	5	1.5	7.0
C6	5	0.5	10.0	C6	5	0.5	10.0
G1	4	1	12.6	G1	4	1	12.6
G2	3.75	1.5	10.0	G2	3.75	1.5	10.0
G3	3.75	1.5	8.9	G3	3.75	1.5	8.9
G4	3.75	1.5	9.2	G4	3.75	1.5	9.2
G5	4	0.5	11.0	G5	4	0.5	11.0
G6	4	0.5	14.0	G6	4	0.5	14.0

With 28% Cooling air:

**Table 20: Co Readings on Grids**

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	455.0	652.0	695.0	103.0	447.0	43.0	36.0	116.0	193.0	142.0	92.0	53.0	36.0	34.0
2	1071.0	1124.0	1218.0	138.0	44.0	23.0	35.0	120.0	1106.0	40.0	25.0	10.0	7.0	15.0
3	308.0	932.0	262.0	50.0	19.0	198.0	354.0	401.0	1228.0	569.0	184.0	12.0	36.0	101.0
4	155.0	335.0	111.0	10.0	12.0	43.0	801.0	697.0	994.0	1031.0	490.0	209.0	117.0	92.0



**Fig 45 CO Profile 3D**

U2 A Pulv o/s 5-24-04

CO Profile

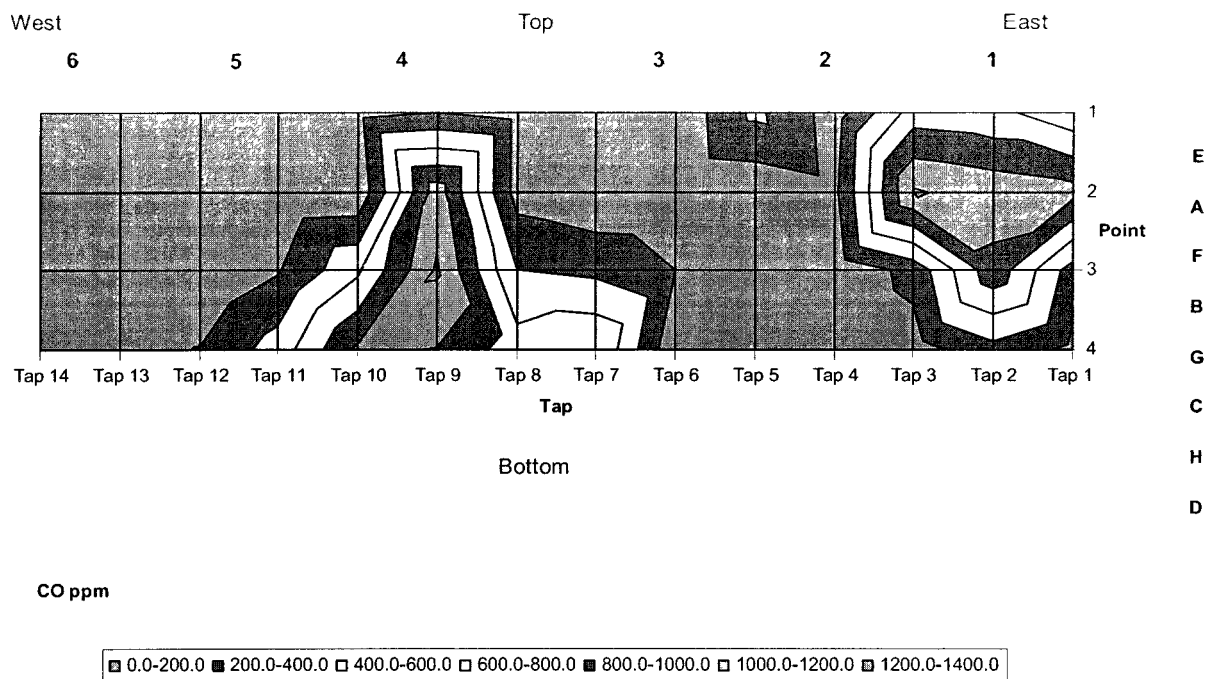


Fig 46 CO Profile 2D

Table 21: O2 Readings on Grids

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1.6	1.6	1.6	2.4	2.2	3.1	3.7	4.1	4.9	5.0	5.1	5.2	5.0	5.0
2	1.4	0.8	0.6	2.2	3.0	3.6	3.3	4.2	3.0	5.4	5.3	5.3	4.7	4.4
3	2.0	1.9	3.3	4.6	4.2	4.1	3.7	3.3	2.3	3.6	3.6	5.1	4.1	4.7
4	2.5	2.2	4.7	6.5	5.3	5.1	4.6	3.1	3.1	2.7	3.5	4.0	4.1	4.4

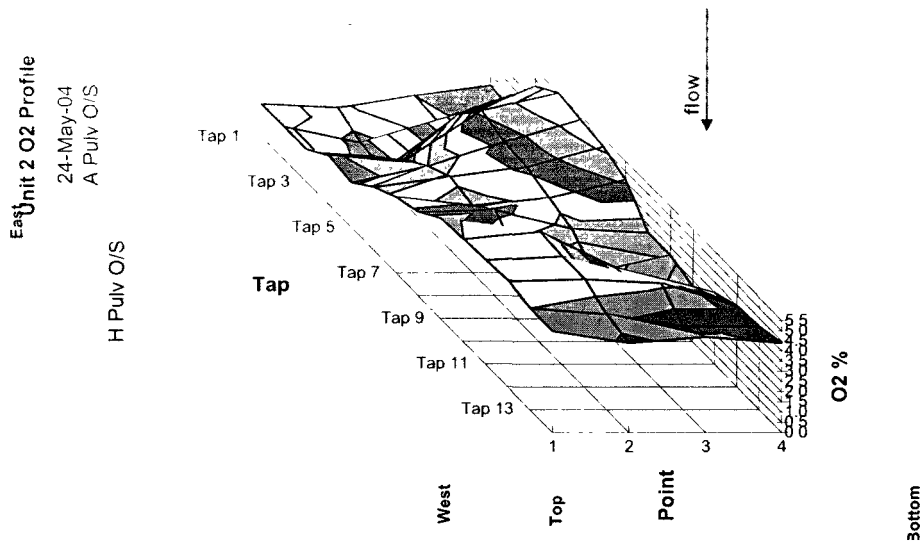


Fig 47 O2 Profile 3D

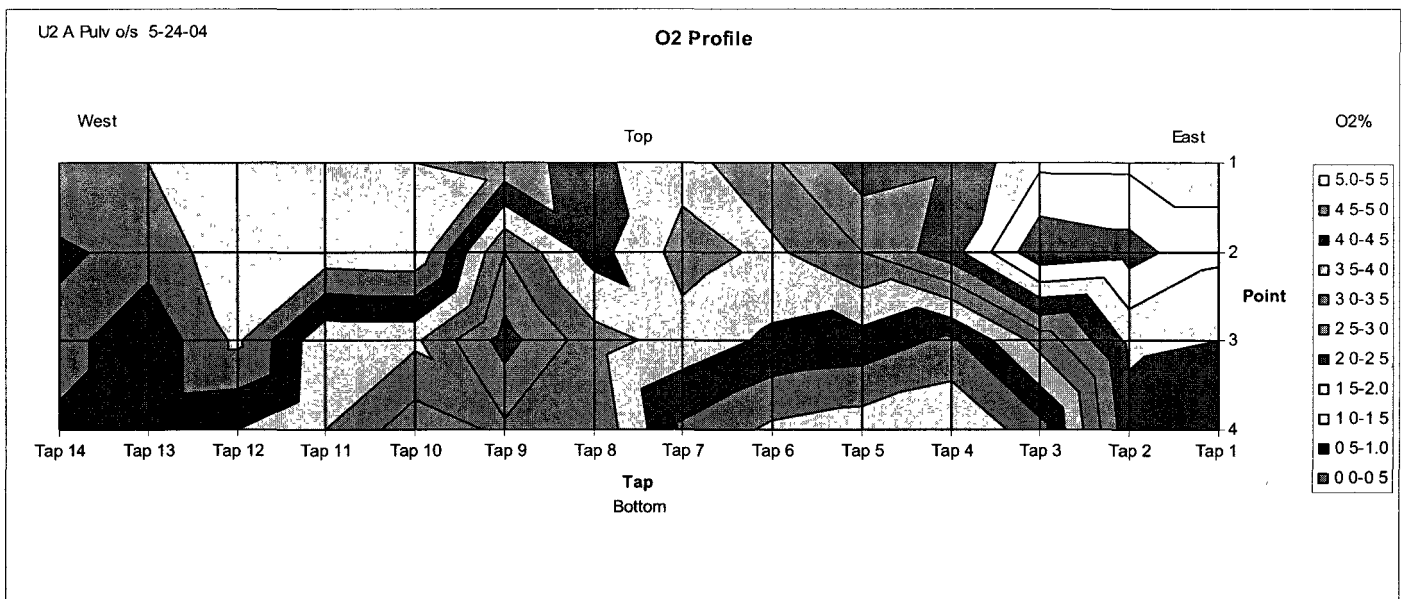


Fig 48 O2 Profile 3D

With 10% Cooling air and middle burner adjustments (in Red)

Table 22

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	258.0	341.0	1217.0	118.0	39.0	16.0	52.0	141.0	436.0	84.0	30.0	95.0	18.0	23.0
2	111.0	1175.0	1068.0	34.0	14.0	50.0	632.0	422.0	1063.0	10.0	42.0	11.0	10.0	10.0
3	628.0	328.0	63.0	14.0	19.0	29.0	501.0	108.0	1228.0	547.0	48.0	11.0	39.0	65.0
4	106.0	245.0	15.0	4.0	15.0	43.0	126.0	1228.0	1228.0	998.0	208.0	219.0	56.0	81.0

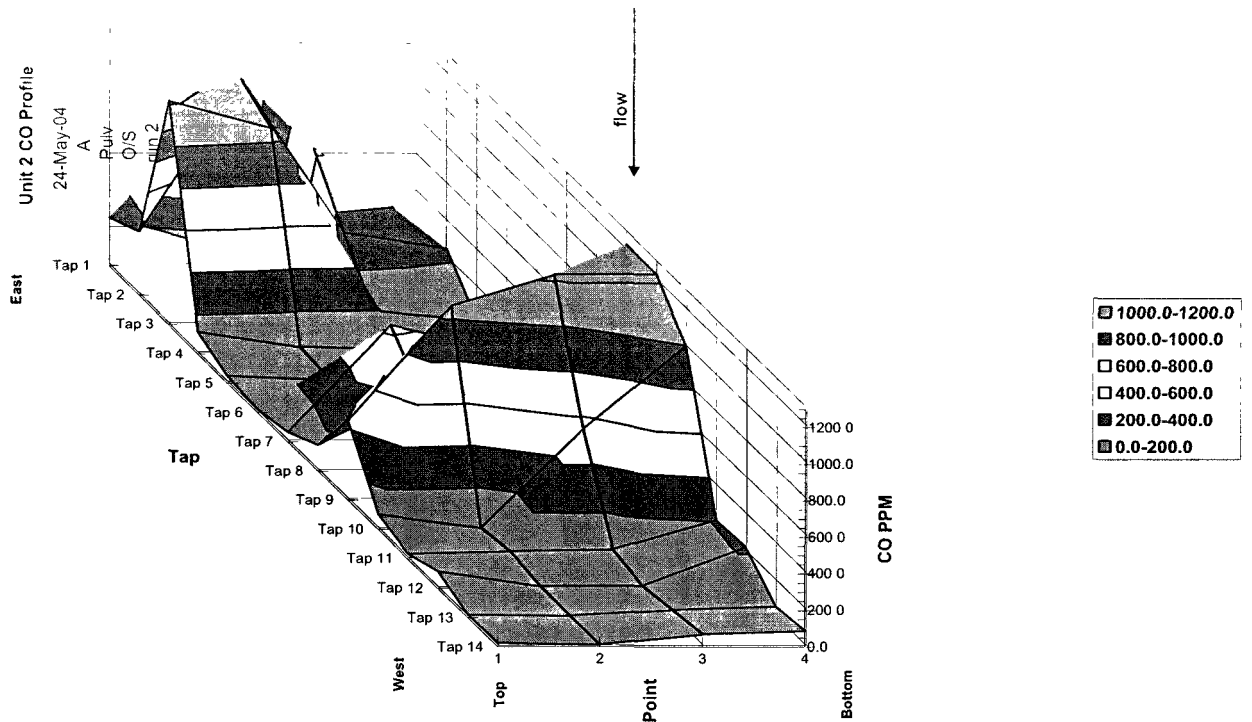


Fig 49 CO Profile 3D

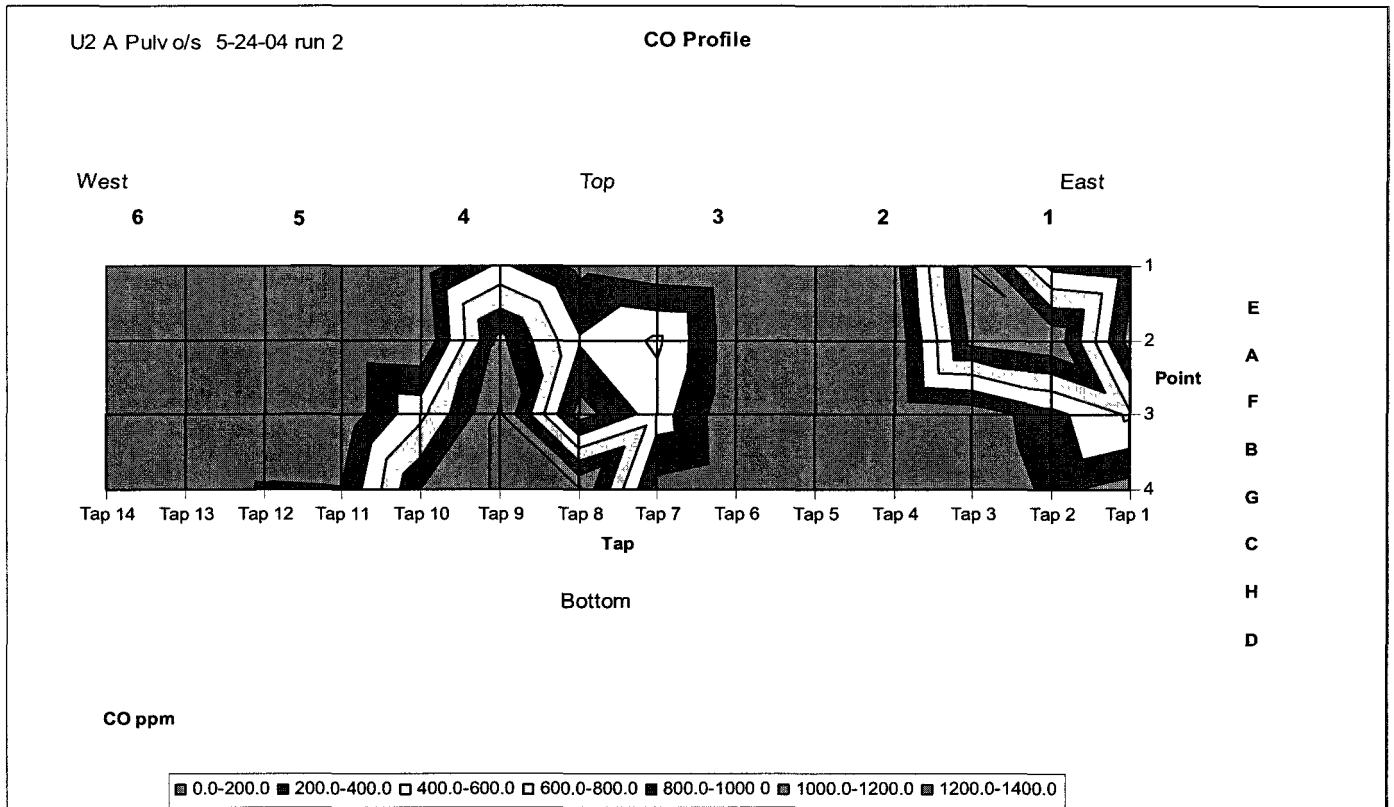


Fig 50 CO Profile 3D

Table 23

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	2.0	1.5	1.0	1.9	2.5	3.3	3.0	3.8	4.1	4.4	4.6	4.4	4.3	4.4
2	2.0	0.7	0.9	2.5	2.7	3.3	2.7	3.8	3.3	5.1	4.8	4.2	3.4	4.4
3	1.7	2.0	3.9	4.3	4.0	3.8	2.9	2.6	1.9	3.2	3.8	4.9	3.6	4.1
4	2.7	2.3	5.4	6.4	5.1	4.7	4.3	3.0	3.0	2.9	3.8	4.0	3.9	4.0

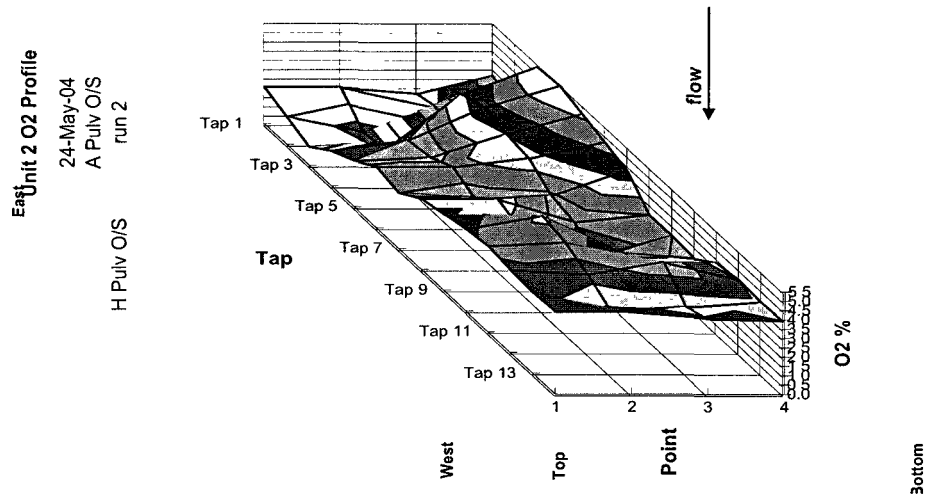


Fig 51 O2 Profile 3D

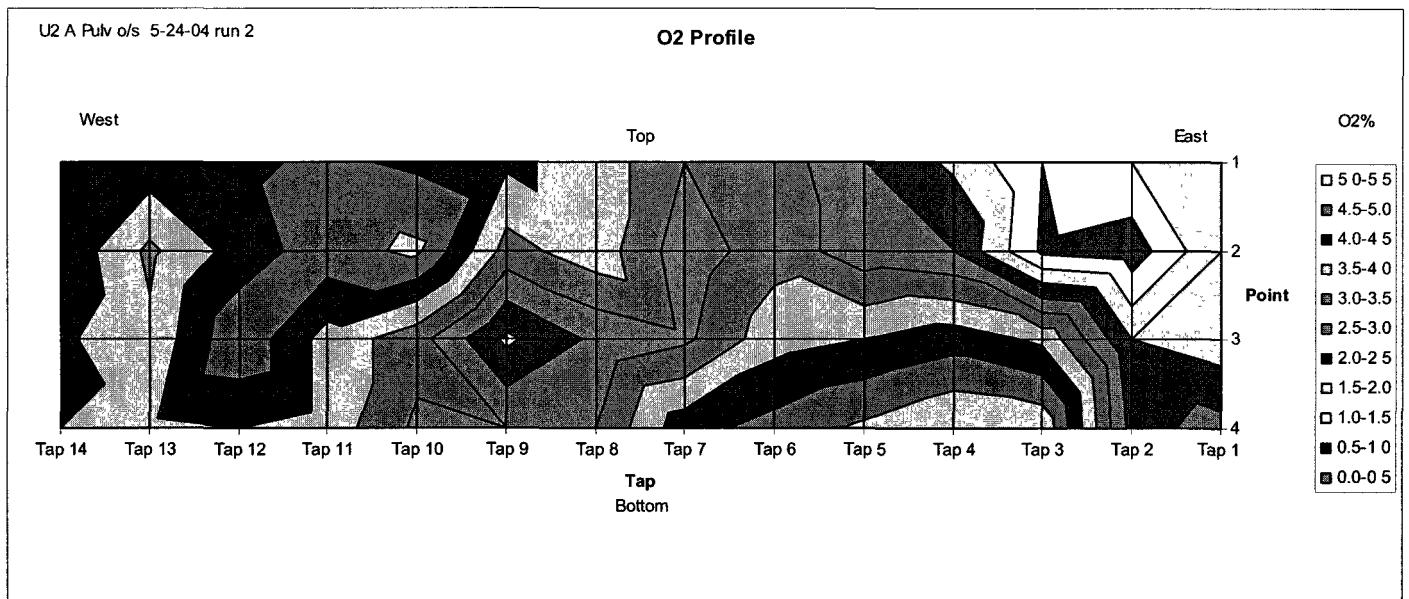


Fig 52 O2 Profile 2D

May 25<sup>th</sup> Testing for Inner zone effect on NOx.

**Table 24:** Burner Settings for Last profile and Current Profile

5/24/04	r14	A mill O/S		5/25/04	r15 Test1	A mill O/S	
	Spin	Inner	Outer		Spin	Inner	Outer
E1	3.75	1.5	8.0	E1	3.75	1.5	8.0
E2	3.75	1.5	5.1	E2	3.75	1.5	6.5
E3	4.25	1.5	5.5	E3	4.25	1.5	7.0
E4	4.5	1.5	5.5	E4	4.5	1.5	7.0
E5	3.75	1.5	5.4	E5	3.75	1.5	6.5
E6	4	0.5	10.0	E6	4	0.5	10.0
A1	3.75	1.5	8.6	A1	3.75	1.5	8.6
A2	3.75	1.5	6.8	A2	3.75	1.5	6.8
A3	4.25	1.5	6.1	A3	4.25	1.5	6.1
A4	4.25	1.5	6.3	A4	4.25	1.5	6.3
A5	3.75	1.5	7.1	A5	3.75	1.5	7.1
A6	4	0.5	10.0	A6	4	0.5	10.0
F1	4	0.5	8.0	F1	4	0.5	9.0
F2	3.75	1.5	5.4	F2	3.75	1.5	6.0
F3	4.25	1.5	4.8	F3	4.25	1.5	7.0
F4	4.25	1.5	5.2	F4	4.25	1.5	7.0
F5	3.75	1.5	5.6	F5	3.75	1.5	6.0
F6	4	0.5	10.0	F6	4	0.5	10.0
B1	5	0.5	14.0	B1	5	0.5	14.0
B2	3.75	1.5	9.0	B2	3.75	1.5	9.0
B3	3.75	1.5	9.0	B3	3.75	1.5	9.0
B4	3.75	1.5	9.0	B4	3.75	1.5	9.0
B5	3.75	1.5	9.0	B5	3.75	1.5	9.0
B6	4	0.5	14.0	B6	4	0.5	14.0
D1	3.75	1.5	9.0	D1	3.75	1.5	9.0
D2	3.5	1.5	6.0	D2	3.5	1.5	6.0
D3	3.5	1.5	5.5	D3	3.5	1.5	4.5
D4	3.75	1.5	5.5	D4	3.75	1.5	4.8
D5	3.75	1.5	7.0	D5	3.75	1.5	7.0
D6	5	1.5	10.3	D6	5	1.5	10.3
H1	3.75	1.5	9.7	H1	3.75	1.5	9.7
H2	3.75	1.5	7.0	H2	3.75	1.5	7.0
H3	3.75	1.5	6.0	H3	3.75	1.5	6.0
H4	3.75	1.5	6.0	H4	3.75	1.5	6.0
H5	3.75	1.5	7.0	H5	3.75	1.5	7.0
H6	3.75	1.5	9.5	H6	3.75	1.5	9.5
C1	3.75	1.5	9.0	C1	3.75	1.5	10.0
C2	3.75	1.5	6.7	C2	3.75	1.5	7.5
C3	3.75	1.5	6.0	C3	3.75	1.5	7.0
C4	3.75	1.5	6.2	C4	3.75	1.5	7.0
C5	5	1.5	7.0	C5	5	1.5	7.5
C6	5	0.5	10.0	C6	5	0.5	10.0
G1	4	1	12.6	G1	4	1	12.6
G2	3.75	1.5	10.0	G2	3.75	1.5	10.0
G3	3.75	1.5	8.9	G3	3.75	1.5	8.9
G4	3.75	1.5	9.2	G4	3.75	1.5	9.2
G5	4	0.5	11.0	G5	4	0.5	11.0
G6	4	0.5	14.0	G6	4	0.5	14.0

Table 25

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1218.0	1048.0	594.0	373.0	46.0	31.0	45.0	361.0	257.0	257.0	116.0	77.0	40.0	36.0
2	1218.0	1218.0	1218.0	58.0	13.0	125.0	108.0	34.0	243.0	700.0	269.0	55.0	5.0	22.0
3	1218.0	1034.0	383.0	26.0	37.0	52.0	125.0	60.0	837.0	80.0	47.0	11.0	11.0	21.0
4	1148.0	1183.0	69.0	7.0	43.0	51.0	53.0	98.0	339.0	386.0	461.0	113.0	33.0	30.0

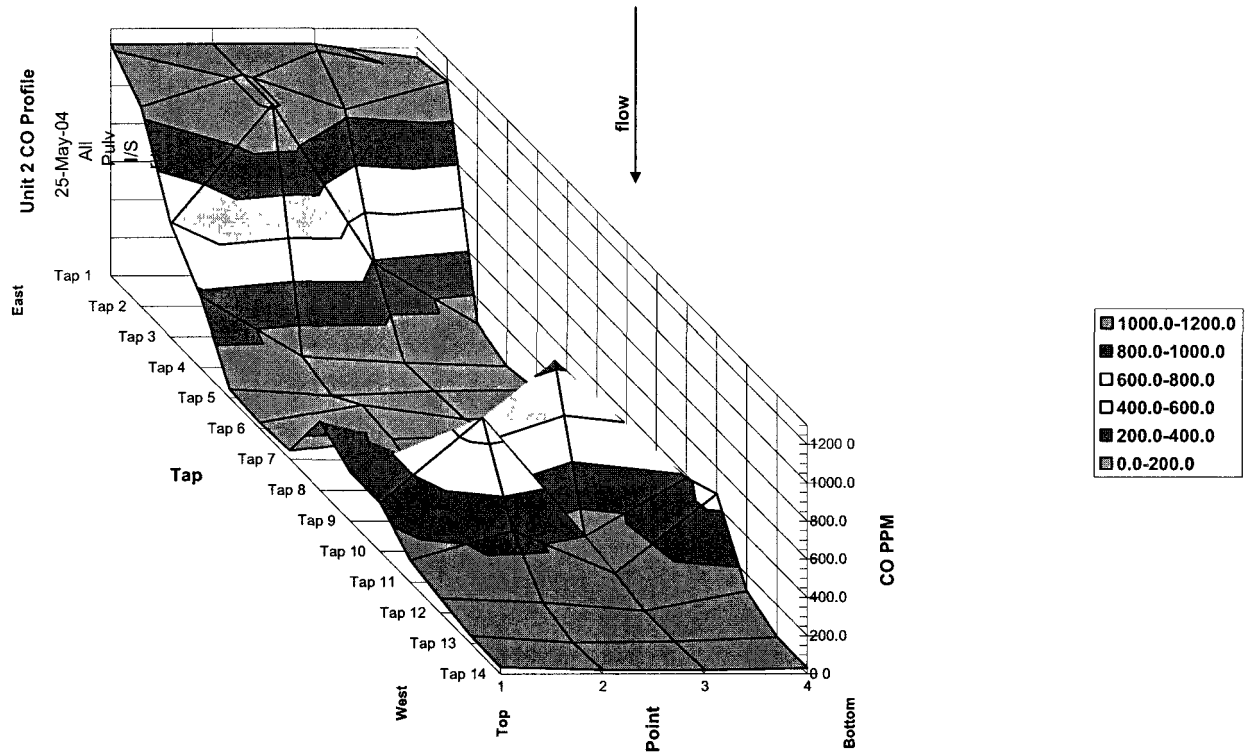


Fig 53 CO Profile 3D



U2 All Pulv I/s 5-25-04 run 1

CO Profile

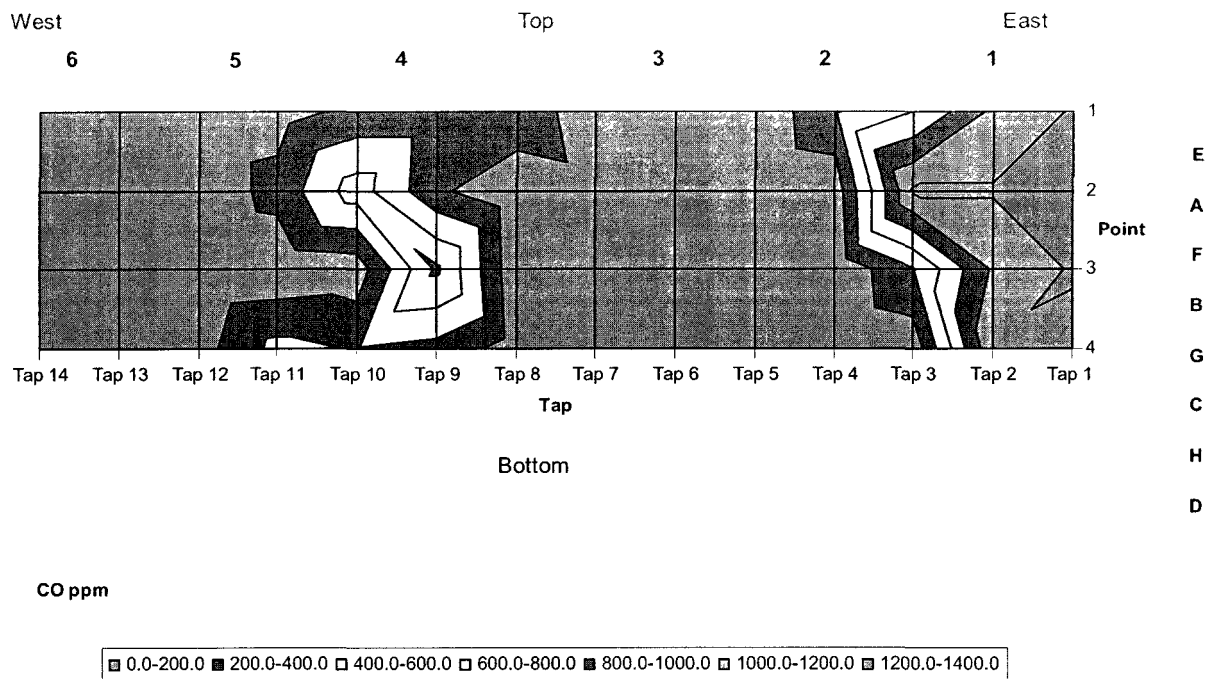


Fig 54 CO Profile 3D

Table 26

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1.3	1.3	5.0	2.7	2.8	3.2	3.8	3.4	3.4	3.0	3.6	3.5	3.5	3.3
2	0.5	0.6	0.8	2.2	3.2	3.2	3.6	4.2	3.0	1.8	2.4	3.1	3.8	3.9
3	1.3	2.0	3.2	4.5	3.8	3.8	3.8	4.2	2.8	3.0	3.8	3.6	3.0	3.5
4	1.8	1.8	4.8	6.5	5.2	4.6	5.3	4.3	4.0	2.9	3.0	4.8	3.3	3.6

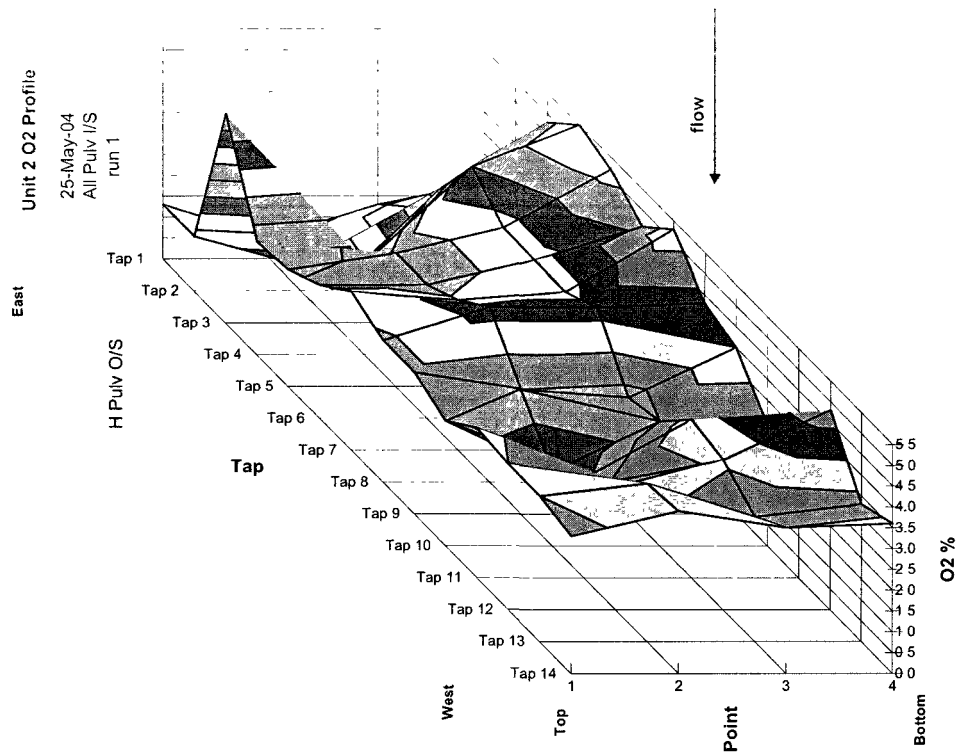


Fig 55 O2 Profile 3D

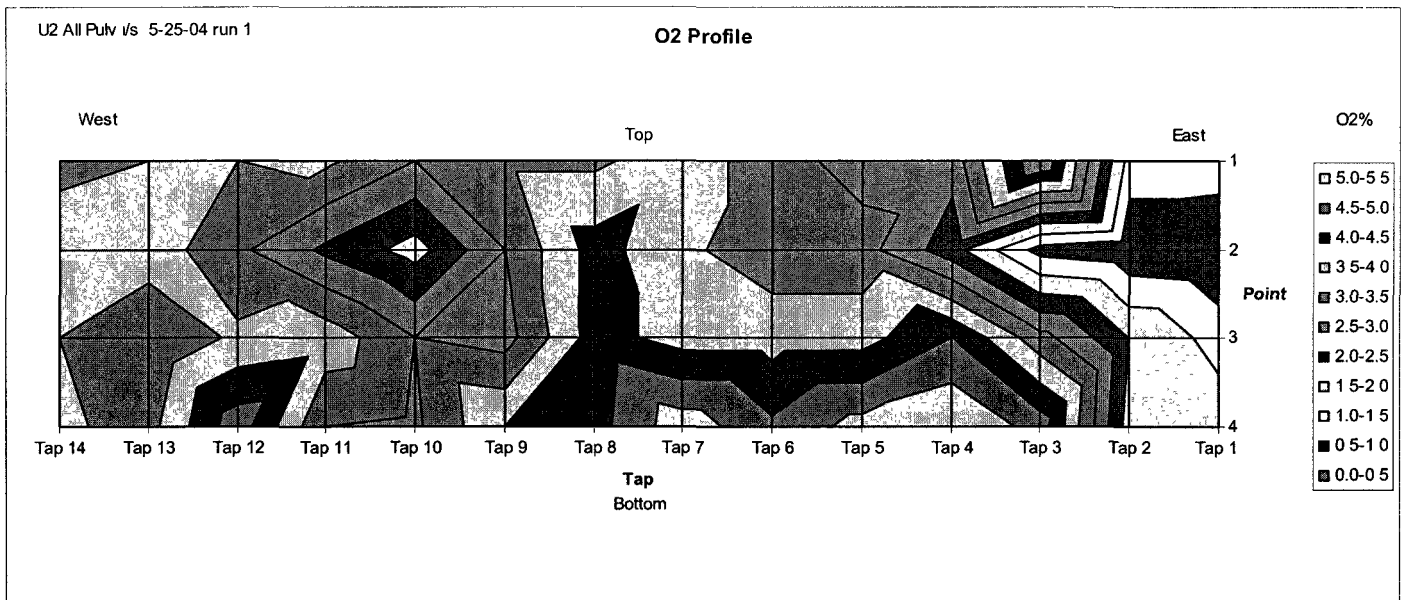


Fig 56 O2 Profile 2D

Run 2 Set all inner zone to 1".

Table 27

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1155.0	1155.0	1155.0	359.0	170.0	16.0	25.0	61.0	49.0	246.0	200.0	287.0	147.0	117.0
2	1213.0	1213.0	1213.0	49.0	24.0	36.0	34.0	83.0	628.0	590.0	323.0	51.0	98.0	42.0
3	1116.0	1116.0	416.0	131.0	23.0	12.0	289.0	254.0	180.0	468.0	132.0	124.0	57.0	50.0
4	1082.0	1214.0	49.0	10.0	30.0	31.0	33.0	160.0	408.0	796.0	549.0	201.0	152.0	48.0

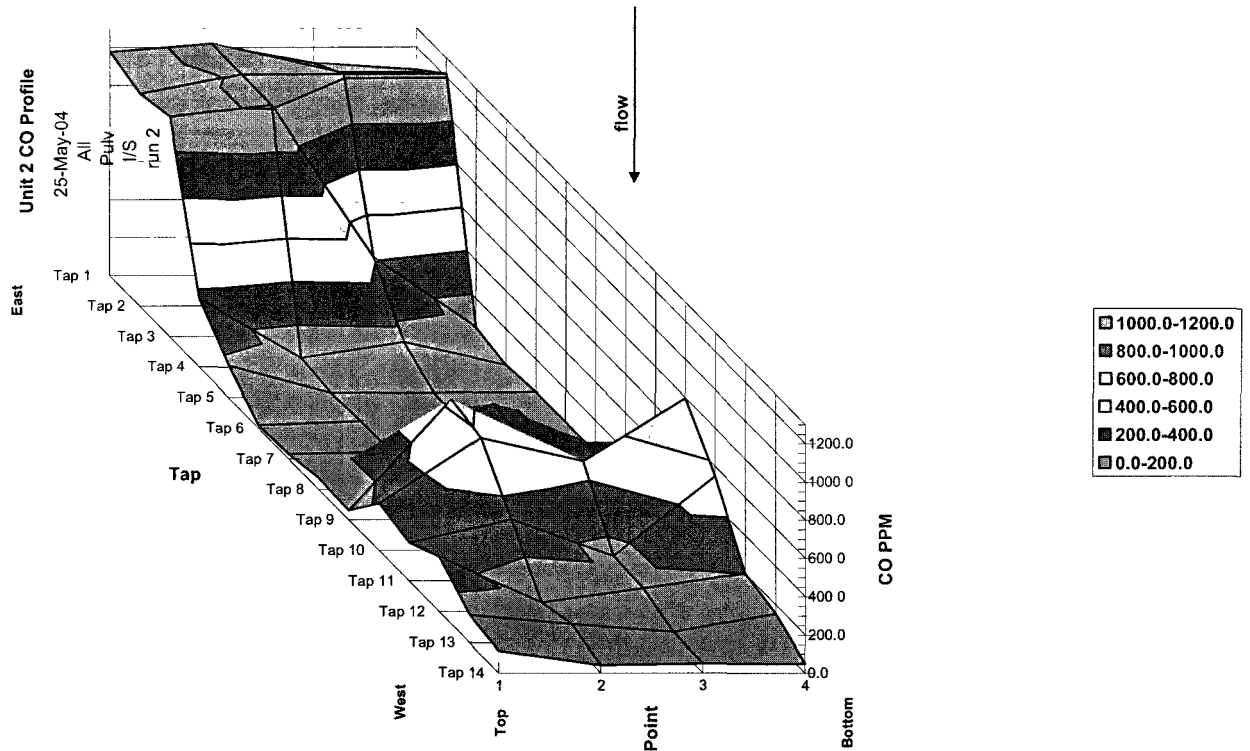


Fig 57 CO Profile 3D

U2 All Pulv i/s 5-25-04 run 2

CO Profile

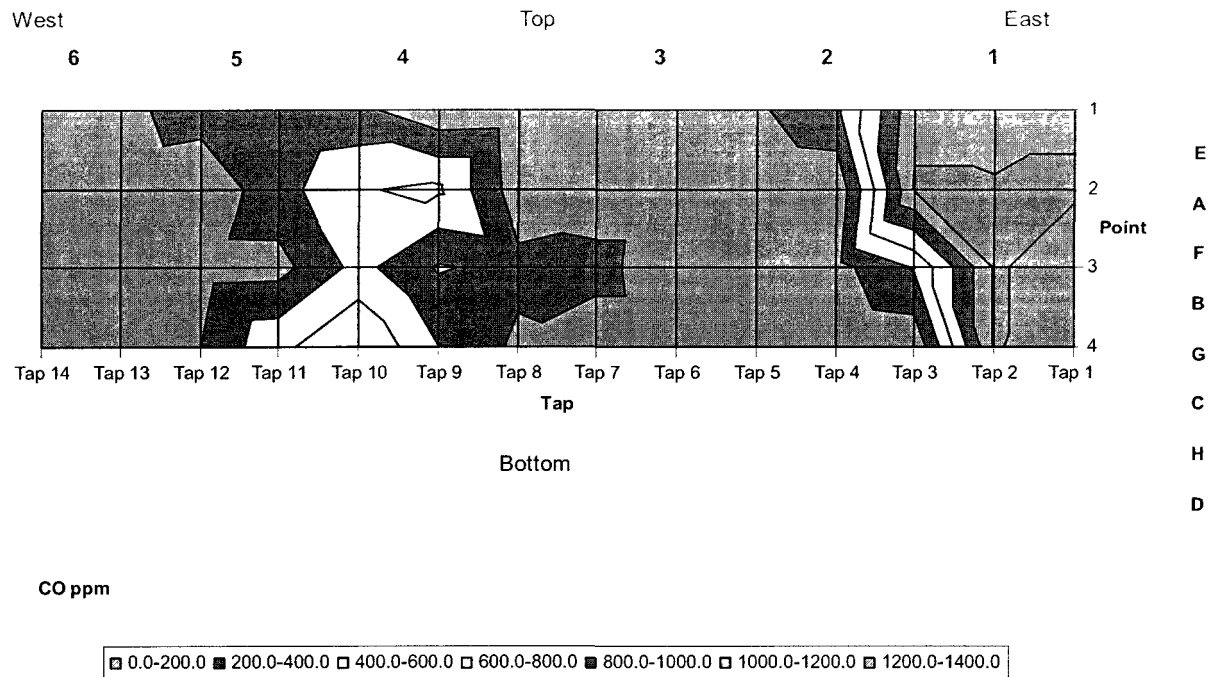


Fig 58 CO Profile 2D

Table 28 O2 Grid Readings

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	2.0	1.5	1.0	1.9	2.5	3.3	3.0	3.8	4.1	4.4	4.6	4.4	4.3	4.4
2	2.0	0.7	0.9	2.5	2.7	3.3	2.7	3.8	3.3	5.1	4.8	4.2	3.4	4.4
3	1.7	2.0	3.9	4.3	4.0	3.8	2.9	2.6	1.9	3.2	3.8	4.9	3.6	4.1
4	2.7	2.3	5.4	6.4	5.1	4.7	4.3	3.0	3.0	2.9	3.8	4.0	3.9	4.0

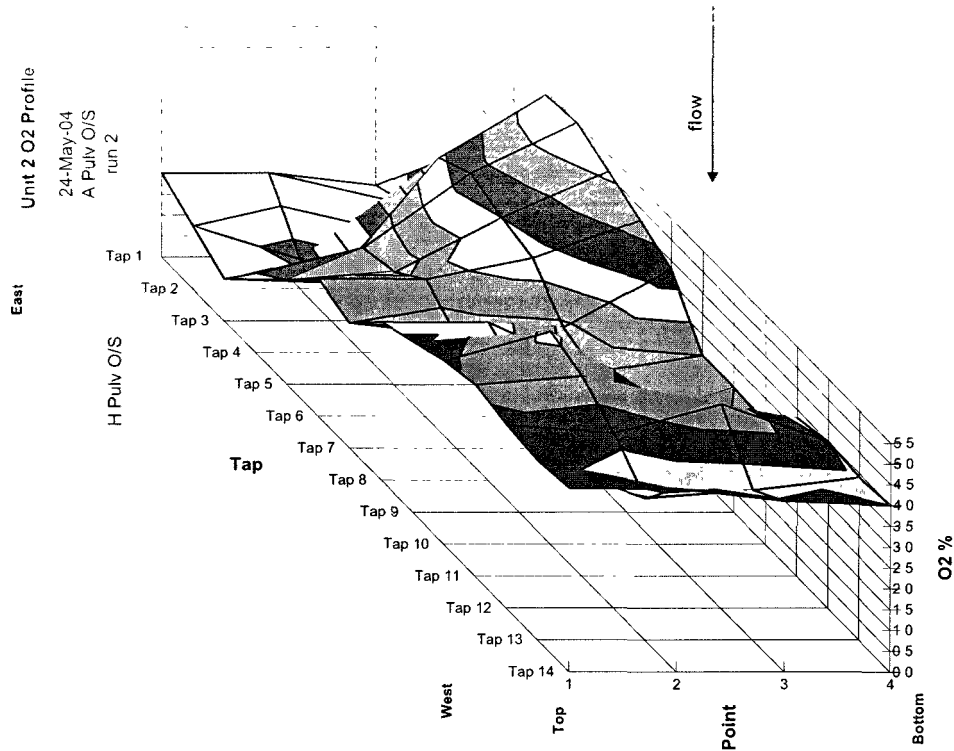


Fig 59 O2 Profile 3D

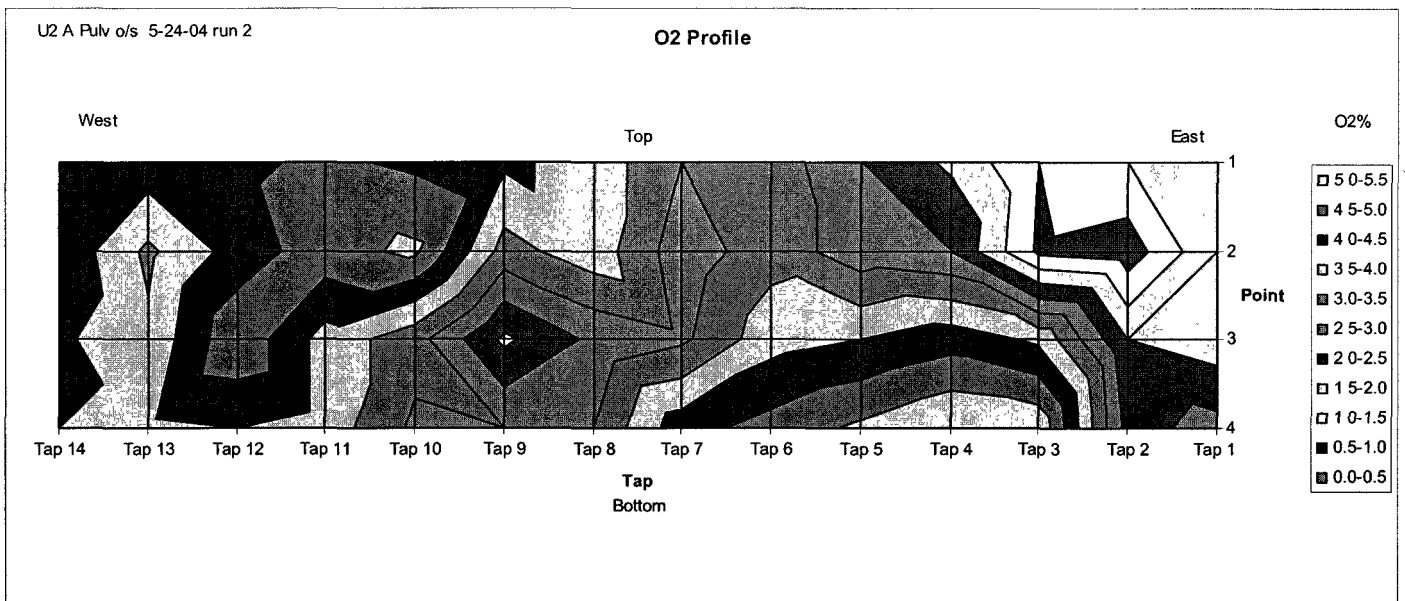
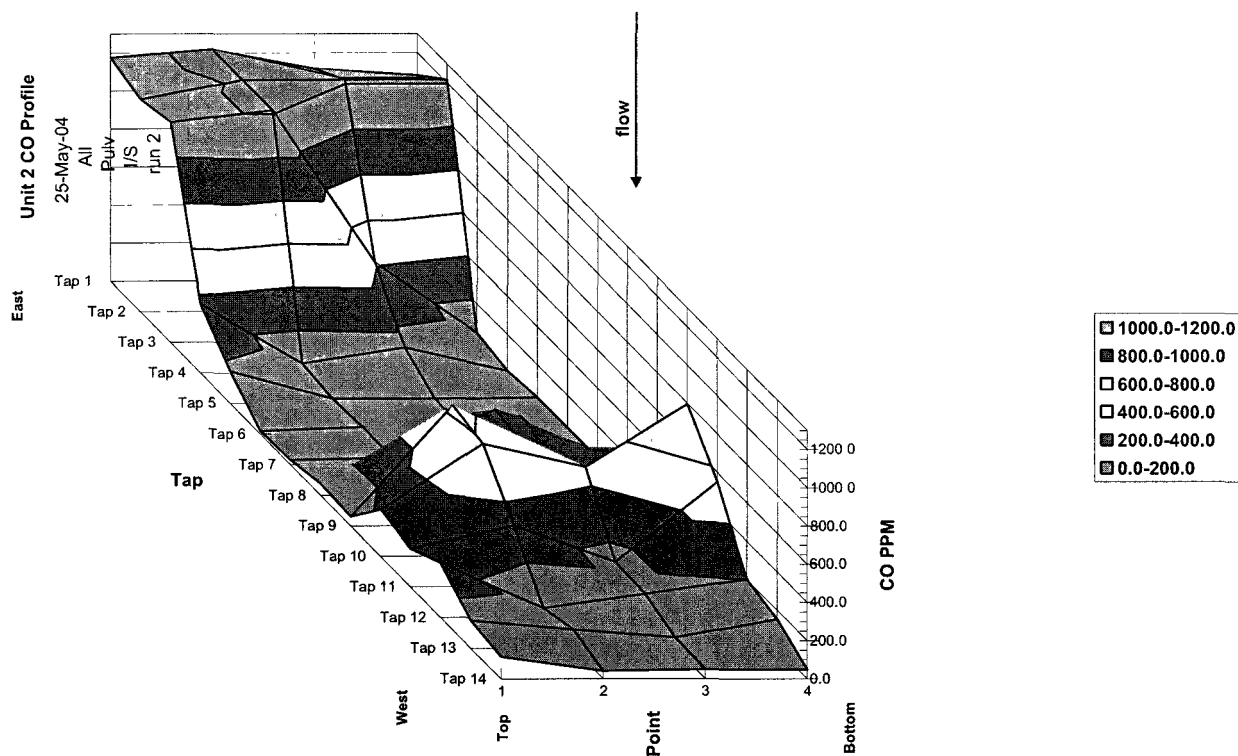


Fig 60 O2 Profile 2D

Run 3 Set all inner zone 0.5".

**Table 29 CO Grid Readings**

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1177.0	1117.0	1218.0	359.0	170.0	16.0	25.0	61.0	49.0	246.0	200.0	287.0	147.0	117.0
2	1218.0	1218.0	1218.0	49.0	24.0	36.0	34.0	83.0	628.0	590.0	323.0	51.0	98.0	42.0
3	1116.0	1218.0	416.0	131.0	23.0	12.0	289.0	254.0	180.0	468.0	132.0	124.0	57.0	50.0
4	1082.0	1212.0	49.0	10.0	30.0	31.0	33.0	160.0	408.0	710.0	549.0	201.0	152.0	48.0



**Fig 61 CO Profile 3D**

U2 All Pulv i/s 5-25-04 run 2

CO Profile

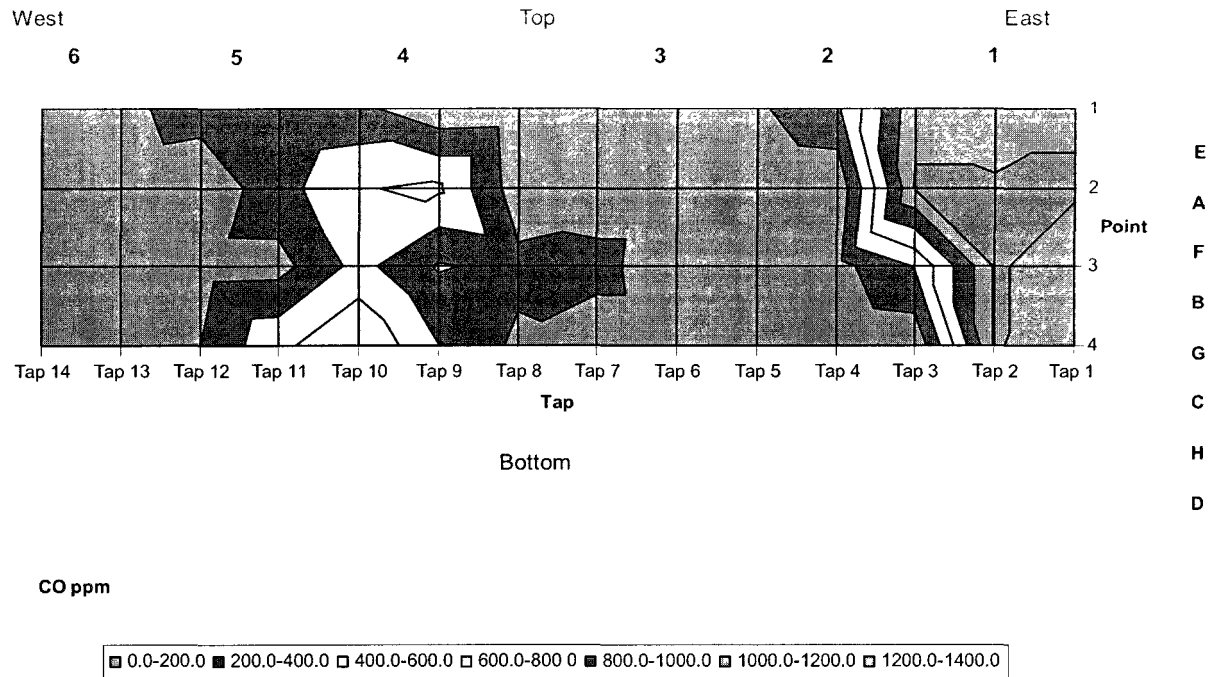


Fig 62 CO Profile 2D

Table 30 O2 Grid Readings

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1.8	1.3	1.4	3.1	2.7	3.7	3.8	4.0	3.0	2.8	2.7	2.8	3.0	3.1
2	0.8	0.2	1.2	2.4	3.2	4.2	4.4	4.5	3.0	1.9	2.0	2.8	3.7	3.3
3	1.5	2.0	4.8	5.2	4.2	4.7	4.2	4.3	3.2	2.5	3.6	2.9	3.1	3.3
4	2.4	2.4	5.9	6.8	5.5	5.3	5.7	4.9	5.0	3.0	3.2	5.4	3.5	3.4

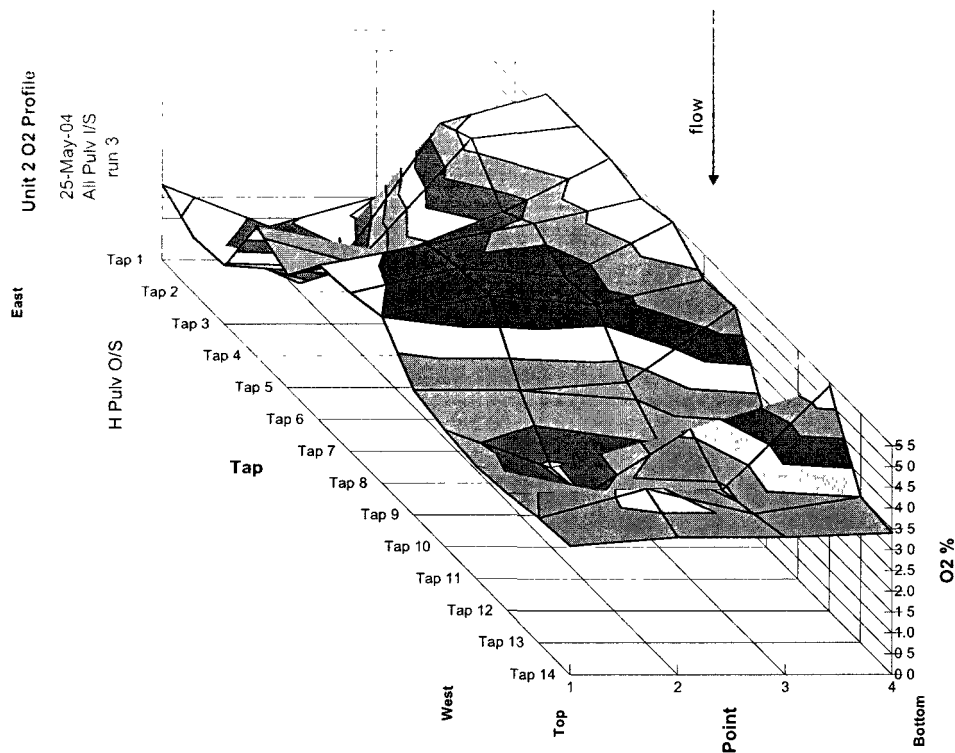


Fig 63 O2 Profile 3D

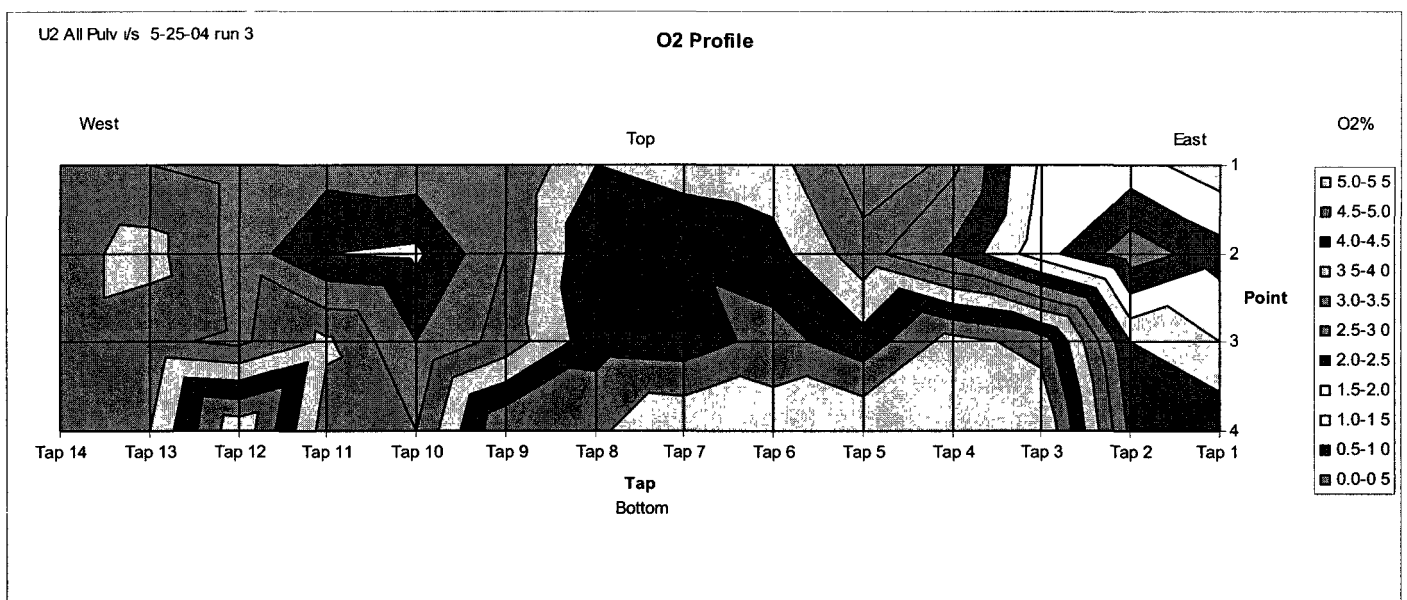


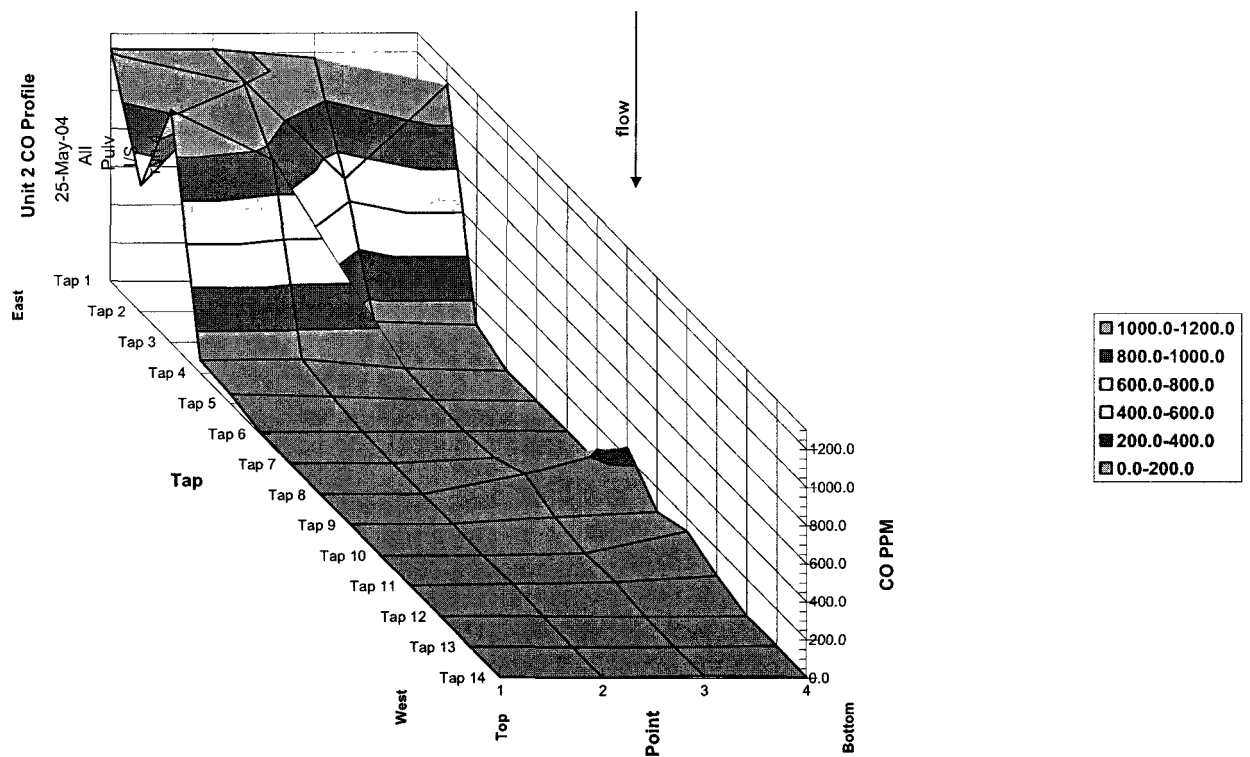
Fig 64 O2 Profile 2D



Run 4 Set all inner zone 1". ABT engineers surveyed bottom burners and found out west side bottom burners generated more smoke than the east side. So ABT engineers opened up several west side bottom burner's outer register and eliminated west side CO

**Table 31 CO Grid Readings**

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1213.0	662.0	1210.0	67.0	50.0	11.0	7.0	5.0	8.0	3.0	7.0	5.0	4.0	6.0
2	1218.0	1218.0	956.0	70.0	34.0	11.0	6.0	4.0	9.0	3.0	15.0	5.0	4.0	5.0
3	1170.0	693.0	105.0	21.0	17.0	13.0	33.0	109.0	46.0	17.0	26.0	4.0	4.0	13.0
4	424.0	1187.0	87.0	7.0	10.0	17.0	11.0	251.0	72.0	131.0	58.0	4.0	9.0	6.0



**Fig 65 CO Profile 3D**

U2 All Pulv i/s 5-25-04 run 4

CO Profile

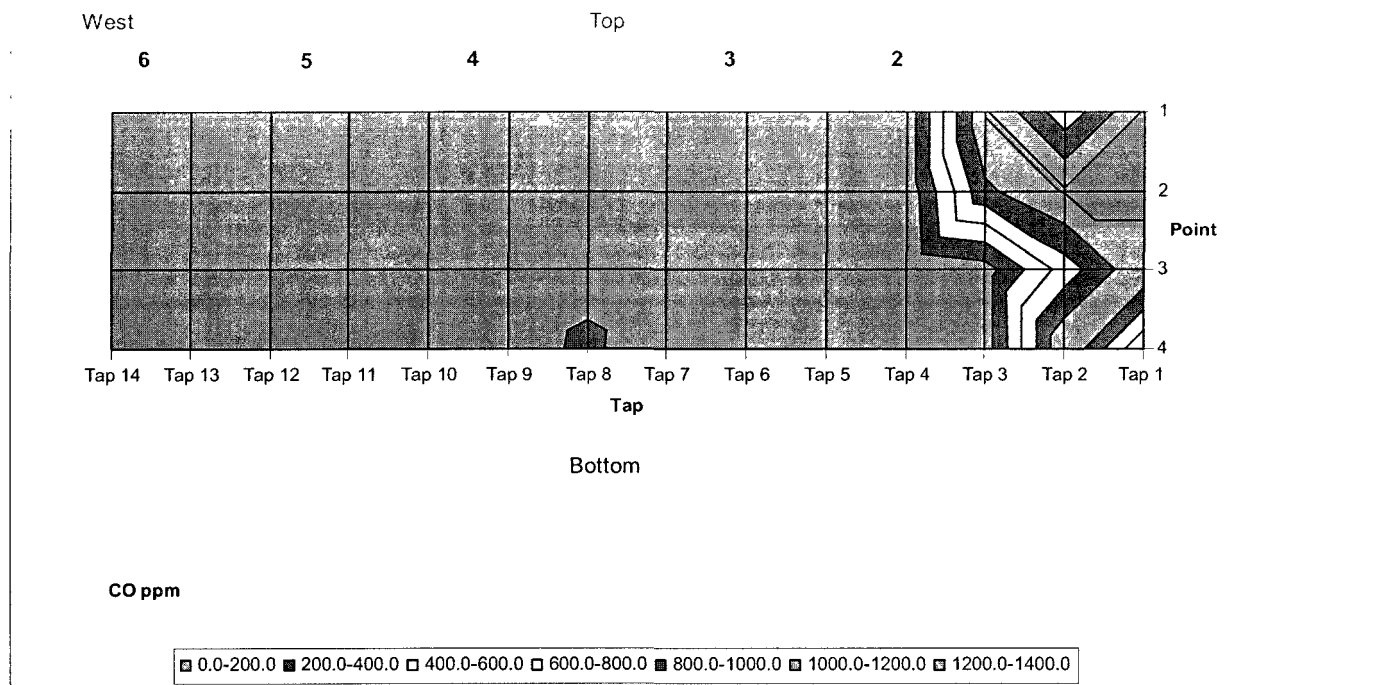


Fig 66 CO Profile 2D

Table 32 O2 Grid Readings

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	0.8	1.6	1.1	3.0	2.6	3.5	4.4	4.5	4.3	4.3	4.2	4.0	3.9	3.7
2	0.3	0.4	1.1	2.5	2.8	3.2	3.7	4.4	4.1	4.1	3.1	3.7	3.4	3.6
3	1.4	2.0	3.8	4.3	3.7	3.6	3.9	3.7	3.7	3.5	3.7	3.7	3.5	3.6
4	2.0	1.6	4.6	5.7	5.2	4.4	4.7	3.6	4.2	3.2	3.5	4.9	3.7	3.7

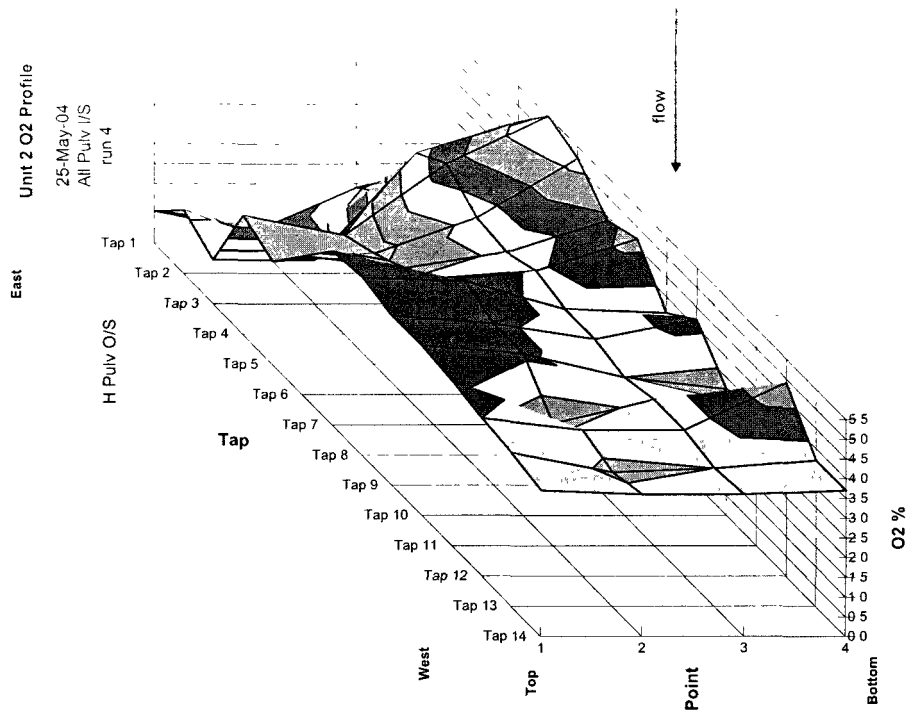


Fig 67 O2 Profile 3D

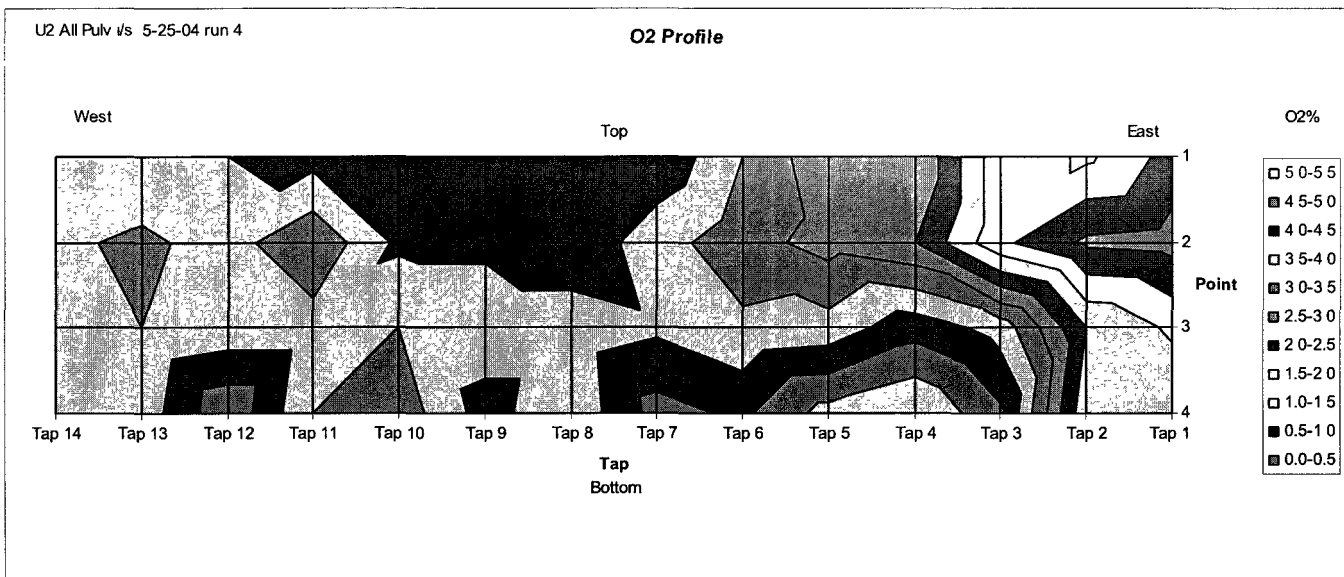


Fig 68 O2 Profile 3D

Table 33 Inner Air 's Setting vs NOx

	Inner Register	Nox
	1.5	0.33
	1.0	0.315
	0.5	0.325-0.33

May 26<sup>th</sup>

**Table 34** Burner Settings for Last profile and Current Profile

5/25/04	r15 Test4	A mill O/S		5/26/04	r16 Test1	A mill O/S	
	Spin	Inner	Outer		Spin	Inner	Outer
E1	3.75	1	8.0	E1	3.75	1	8.0
E2	3.75	1	6.5	E2	3.75	1	6.5
E3	4.25	1	7.0	E3	4.25	1	6.0
E4	4.5	1	7.0	E4	4.5	1	6.0
E5	3.75	1	6.5	E5	3.75	1	6.5
E6	4	1	10.0	E6	4	1	10.0
A1	3.75	1	8.6	A1	3.75	1	8.6
A2	3.75	1	6.8	A2	3.75	1	6.8
A3	4.25	1	6.1	A3	4.25	1	6.1
A4	4.25	1	6.3	A4	4.25	1	6.3
A5	3.75	1	7.1	A5	3.75	1	7.1
A6	4	1	10.0	A6	4	1	10.0
F1	4	1	9.0	F1	4	1	9.0
F2	3.75	1	6.0	F2	3.75	1	6.0
F3	4.25	1	7.0	F3	4.25	1	7.0
F4	4.25	1	7.0	F4	4.25	1	7.0
F5	3.75	1	6.0	F5	3.75	1	6.0
F6	4	1	10.0	F6	4	1	10.0
B1	5	1	14.0	B1	5	1	14.0
B2	3.75	1	9.0	B2	3.75	1	9.0
B3	3.75	1	9.0	B3	3.75	1	9.0
B4	3.75	1	9.0	B4	3.75	1	9.0
B5	3.75	1	9.0	B5	3.75	1	9.0
B6	4	1	14.0	B6	4	1	14.0
D1	3.75	1	9.0	D1	3.75	1	9.0
D2	3.5	1	6.0	D2	3.5	1	5.5
D3	3.5	1	4.5	D3	3.5	1	4.5
D4	3.75	1	4.8	D4	3.75	1	4.5
D5	3.75	1	7.0	D5	3.75	1	5.5
D6	5	1	10.3	D6	5	1	10.3
H1	3.75	1	9.7	H1	3.75	1	9.7
H2	3.75	1	7.0	H2	3.75	1	7.0
H3	3.75	1	6.0	H3	3.75	1	6.0
H4	3.75	1	6.0	H4	3.75	1	6.0
H5	3.75	1	7.0	H5	3.75	1	7.0
H6	3.75	1	9.5	H6	3.75	1	9.5
C1	3.75	1	10.0	C1	3.75	1	10.0
C2	3.75	1	7.5	C2	3.75	1	7.5
C3	3.75	1	7.0	C3	3.75	1	7.0
C4	3.75	1	7.0	C4	3.75	1	7.0
C5	5	1	7.5	C5	5	1	7.5
C6	5	1	10.0	C6	5	1	10.0
G1	4	1	12.6	G1	4	1	12.6
G2	3.75	1	10.0	G2	3.75	1	9.0
G3	3.75	1	8.9	G3	3.75	1	8.9
G4	3.75	1	9.2	G4	3.75	1	11.5
G5	4	1	11.0	G5	4	1	12.5
G6	4	1	14.0	G6	4	1	14.0

Table 35 CO Grid Readings

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	540.0	873.0	359.0	80.0	41.0	27.0	13.0	32.0	17.0	11.0	7.0	4.0	4.0	5.0
2	900.0	1218.0	684.0	48.0	31.0	29.0	15.0	12.0	193.0	7.0	6.0	3.0	3.0	4.0
3	1063.0	1090.0	23.0	25.0	17.0	93.0	25.0	17.0	281.0	133.0	18.0	3.0	4.0	7.0
4	341.0	456.0	115.0	5.0	16.0	80.0	62.0	198.0	307.0	103.0	19.0	7.0	20.0	17.0

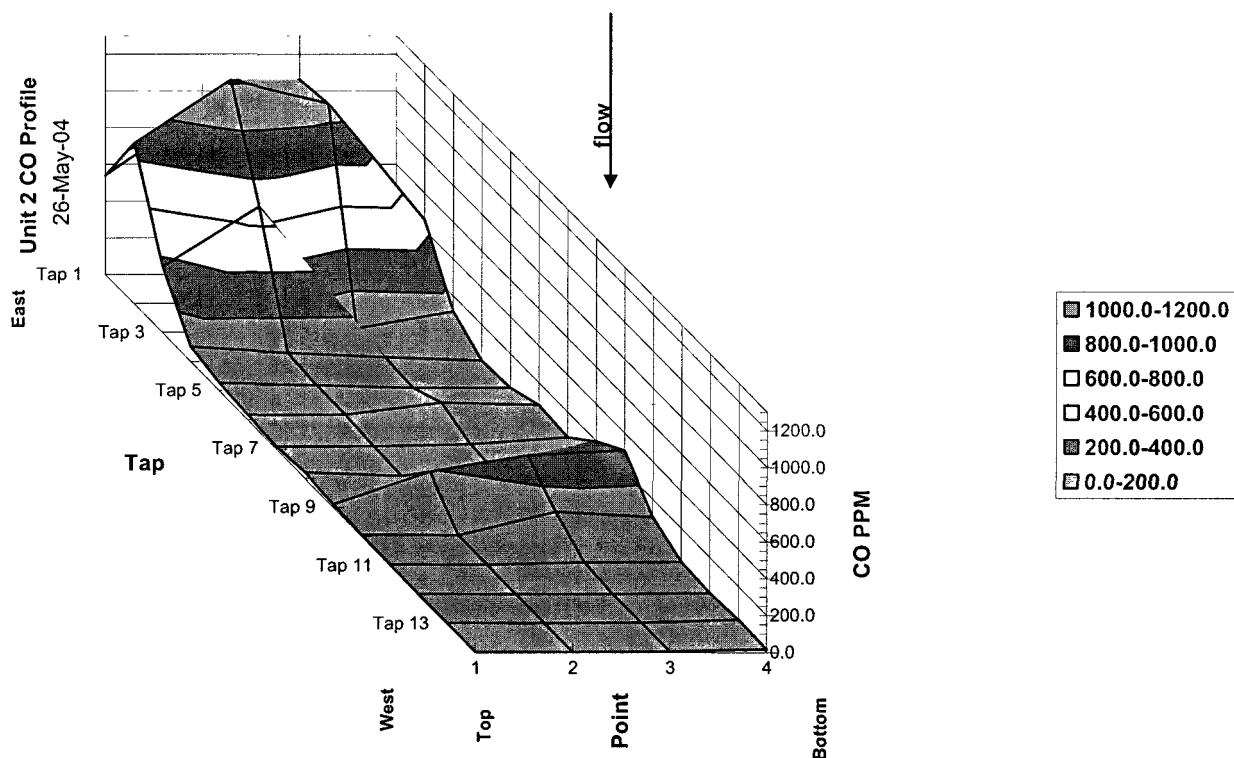


Fig 69 CO Profile 3D

U2 All Pulv's 5-26-04 run 1

CO Profile

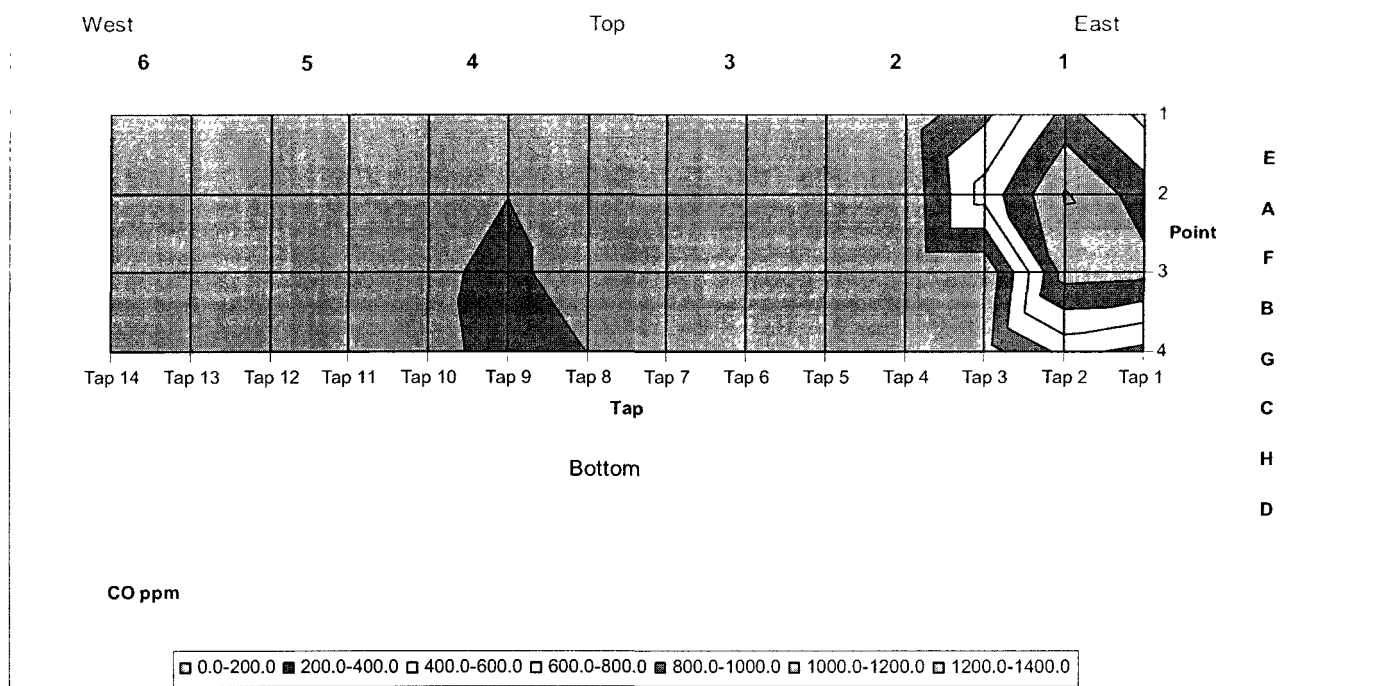


Fig 70 CO Profile 3D

Table 36 O2 Grid Readings

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1.5	1.3	1.7	2.2	2.6	2.8	3.0	4.2	4.0	3.7	4.0	4.2	4.2	4.0
2	1.0	0.8	1.5	2.2	2.7	3.4	3.7	4.3	2.9	3.6	3.7	4.0	3.8	4.0
3	1.4	1.5	3.7	3.5	3.5	3.1	3.6	4.1	2.6	2.8	3.9	3.8	3.7	4.0
4	2.1	2.2	4.0	4.9	4.1	3.7	4.0	3.7	3.5	4.2	4.9	5.2	4.0	4.0

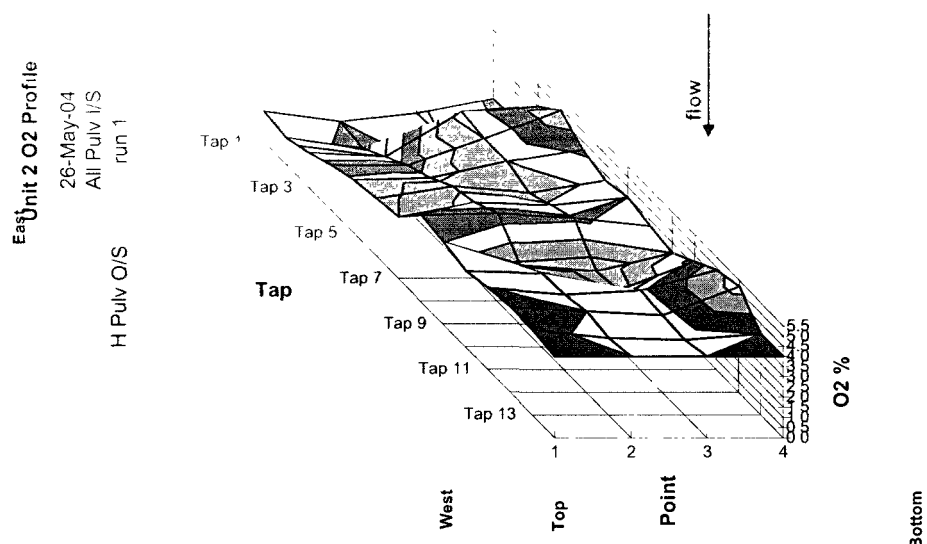


Fig 71 O2 Profile 3D

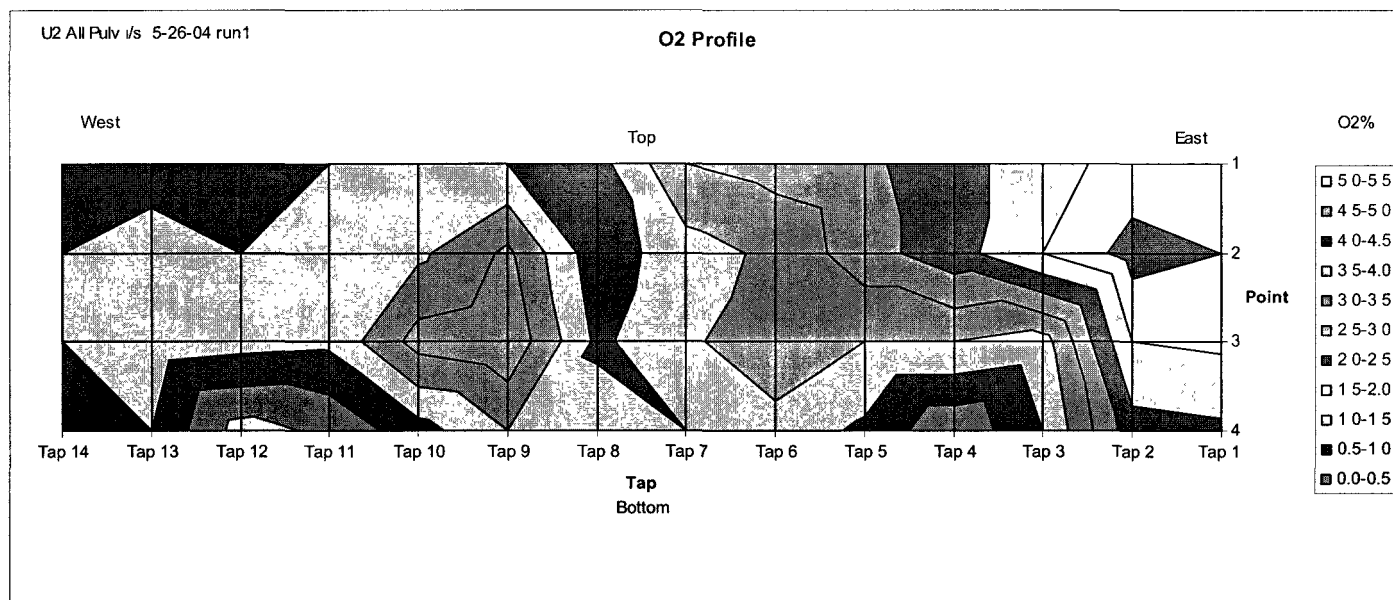


Fig 72 O2 Profile 2D

May 26<sup>th</sup>, Test 2:

**Table 37** Burner Settings for Last profile and Current Profile

5/26/04	r16 Test1	A mill O/S		5/26/04	r17 Test2	A mill O/S	
	Spin	Inner	Outer		Spin	Inner	Outer
E1	3.75	1	8.0	E1	3.75	1.5	10.0
E2	3.75	1	6.5	E2	3.75	1.5	7.0
E3	4.25	1	6.0	E3	4.25	1.5	6.0
E4	4.5	1	6.0	E4	4.5	1.5	6.0
E5	3.75	1	6.5	E5	3.75	1.5	6.5
E6	4	1	10.0	E6	4	0.5	10.0
A1	3.75	1	8.6	A1	3.75	1.5	9.5
A2	3.75	1	6.8	A2	3.75	1.5	7.5
A3	4.25	1	6.1	A3	4.25	1.5	6.1
A4	4.25	1	6.3	A4	4.25	1.5	6.3
A5	3.75	1	7.1	A5	3.75	1.5	7.1
A6	4	1	10.0	A6	4	0.5	10.0
F1	4	1	9.0	F1	4	0.5	10.0
F2	3.75	1	6.0	F2	3.75	1.5	6.0
F3	4.25	1	7.0	F3	4.25	1.5	7.0
F4	4.25	1	7.0	F4	4.25	1.5	7.0
F5	3.75	1	6.0	F5	3.75	1.5	6.0
F6	4	1	10.0	F6	4	0.5	10.0
B1	5	1	14.0	B1	5	0.5	14.0
B2	3.75	1	9.0	B2	3.75	1.5	9.0
B3	3.75	1	9.0	B3	3.75	1.5	9.0
B4	3.75	1	9.0	B4	3.75	1.5	9.0
B5	3.75	1	9.0	B5	3.75	1.5	9.0
B6	4	1	14.0	B6	4	0.5	14.0
D1	3.75	1	9.0	D1	3.75	1.5	9.0
D2	3.5	1	5.5	D2	3.5	1.5	5.5
D3	3.5	1	4.5	D3	3.5	1.5	4.5
D4	3.75	1	4.5	D4	3.75	1.5	4.5
D5	3.75	1	5.5	D5	3.75	1.5	5.5
D6	5	1	10.3	D6	5	1.5	10.3
H1	3.75	1	9.7	H1	3.75	1.5	9.7
H2	3.75	1	7.0	H2	3.75	1.5	7.0
H3	3.75	1	6.0	H3	3.75	1.5	6.0
H4	3.75	1	6.0	H4	3.75	1.5	6.0
H5	3.75	1	7.0	H5	3.75	1.5	7.0
H6	3.75	1	9.5	H6	3.75	1.5	9.5
C1	3.75	1	10.0	C1	3.75	1.5	10.0
C2	3.75	1	7.5	C2	3.75	1.5	7.5
C3	3.75	1	7.0	C3	3.75	1.5	7.0
C4	3.75	1	7.0	C4	3.75	1.5	7.0
C5	5	1	7.5	C5	5	1.5	7.5
C6	5	1	10.0	C6	5	0.5	10.0
G1	4	1	12.6	G1	4	1	12.6
G2	3.75	1	9.0	G2	3.75	1.5	9.0
G3	3.75	1	8.9	G3	3.75	1.5	8.9
G4	3.75	1	11.5	G4	3.75	1.5	11.5
G5	4	1	12.5	G5	4	0.5	12.5
G6	4	1	14.0	G6	4	0.5	14.0



Table 38 CO Grid Readings

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	460.0	802.0	941.0	34.0	56.0	12.0	6.0	17.0	15.0	40.0	15.0	40.0	11.0	34.0
2	704.0		345.0	36.0	12.0	50.0	1.0	37.0	113.0	7.0	14.0	24.0	7.0	8.0
3	480.0	466.0	105.0	5.0	5.0	62.0	36.0	111.0	139.0	94.0	22.0	12.0	23.0	17.0
4	289.0	255.0	102.0	0.0	3.0	15.0	1.0	64.0	82.0	176.0	115.0	37.0	120.0	19.0

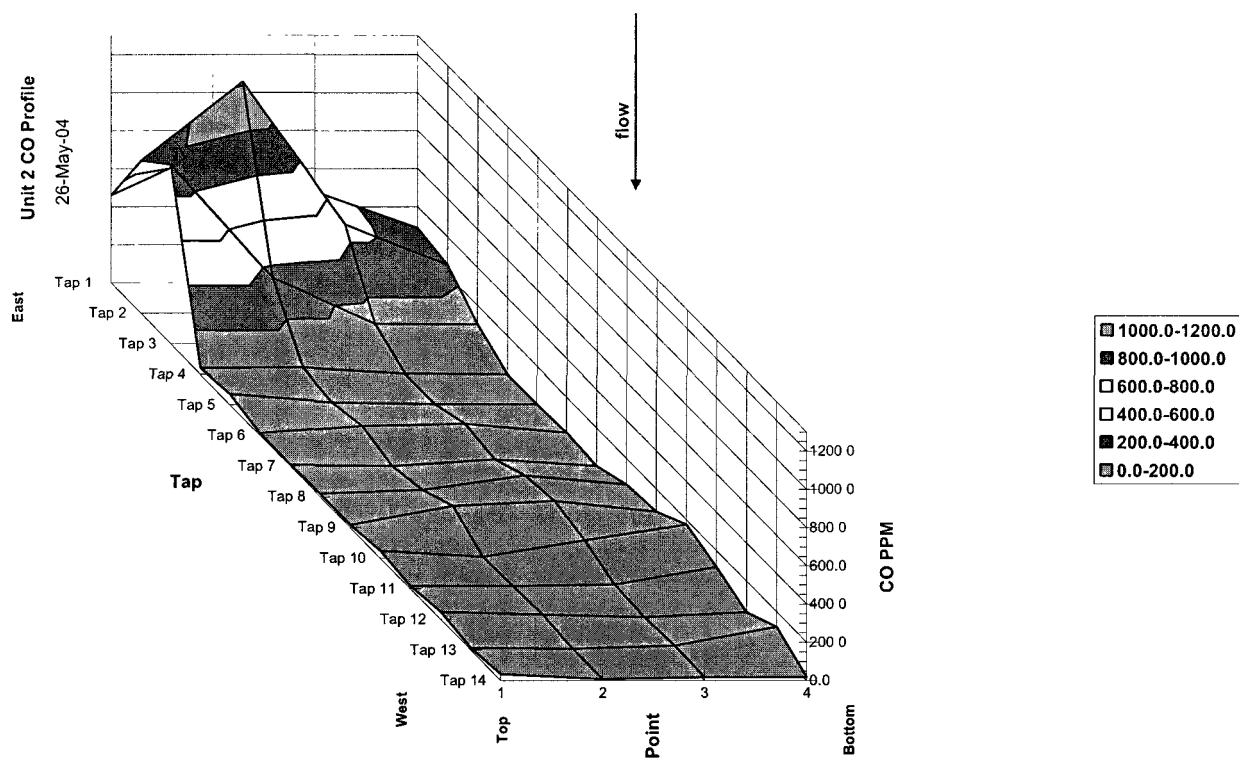


Fig 73 CO Profile 3D

U2 All Pulv/s 5-26-04 run 1

CO Profile

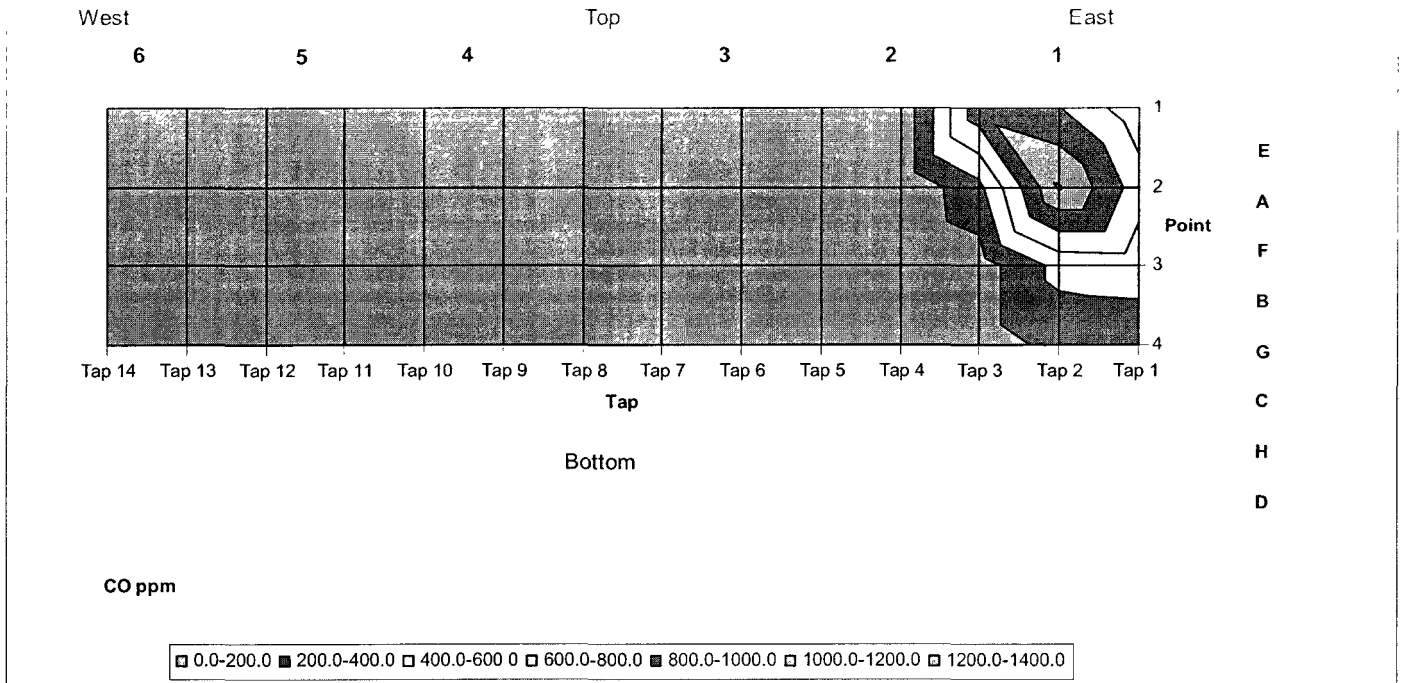


Fig 74 CO Profile 2D

Table 39 O2 Grid Readings

	Tap 1	Tap 2	Tap 3	Tap 4	Tap 5	Tap 6	Tap 7	Tap 8	Tap 9	Tap 10	Tap 11	Tap 12	Tap 13	Tap 14
1	1.5	1.4	1.3	2.8	2.7	3.1	3.5	3.8	4.0	3.3	3.9	3.4	3.5	3.1
2	1.3	0.8	1.6	2.6	2.9	2.7	3.6	4.1	3.4	3.6	3.4	2.9	2.8	3.1
3	1.8	2.0	3.8	4.4	3.7	3.0	3.5	3.6	3.0	2.9	3.6	3.1	2.7	3.1
4	2.6	2.2	4.6	5.9	4.9	4.6	5.1	3.9	4.1	3.8	3.9	4.4	2.8	3.6

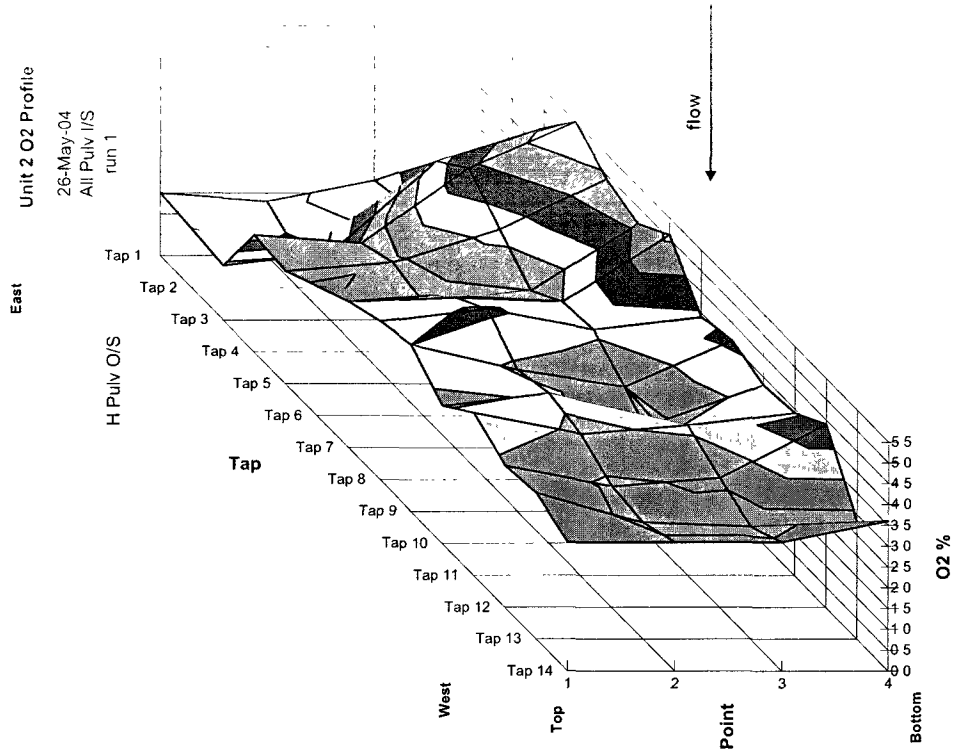


Fig 75 O2 Profile 3D

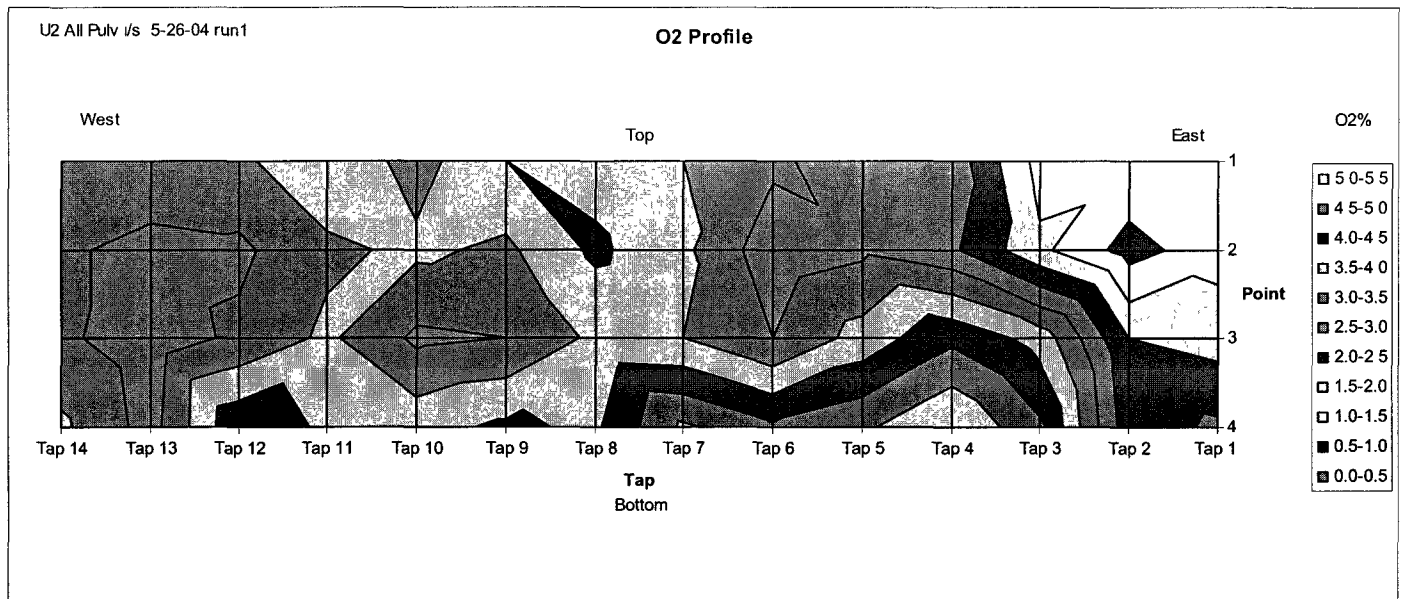


Fig 76 O2 Profile 2D

271 Route 202/206  
P.O. Box 410  
Pluckemin, New Jersey 07078  
Phone 908 470-0470, FAX 908 470-0479  
www.advancedburner.com



August 20, 2004

Mr. James Nelson  
Intermountain Power Service Corporation  
850 West Brush Wellman Road  
Delta, Utah 84624

Subject: Contract 04-45606 for IPP Unit 2 Low NO<sub>x</sub> Burners

Dear Mr. Nelson:

Advanced Burner Technologies is pleased to submit the enclosed "Diagnostic Test Report" based on burner optimization period performed in May 2004. The data recorded during this period demonstrates that daily NO<sub>x</sub> emissions are maintainable at or below the guarantee value of 0.33 lb/mmbtu.

Data also shows that with the final burner settings of May 26<sup>th</sup>, CO emissions are below guarantee of 200 ppm, when all mills are in service. Considerable progress in reducing CO emissions was also accomplished for various mill-out conditions, however optimization was ended on the 26<sup>th</sup> without verifying the CO for all conditions with our final settings. Additional CO reductions will also be realized with implementation of our recommendations, provided on page 10 in the "Conclusions" section of our report.

We have completed our obligations under the contract and intend to bill the final amount held as retention of \$247,122.00.

In addition to the retention, we would like to discuss additional costs incurred by ABT during burner fabrication, which we incurred due to late decision/release from IPSC for subcontracted burner airflow and flame scanner systems. These additional costs are summarized as follows:

Relocation of plate between flow divider & register end plate for IBAM penetration.....	\$ 3,888
Added cost to braze IBAM tubing, in lieu of standard fitting connections, per AMC.....	\$ 9,600
Change location of flame scanner penetrations.....	\$27,744
Alter flow divider rear plate to reduce IBAM turbulence based on CFD model.....	<u>\$ 5,472</u>

**TOTAL ADDITIONAL COSTS TO ABT: \$46,704**

We understand that IPSC also had additional costs associated with making repairs on minor shipping damage to burner frames and IBAM tubing leaks. The amount of these should be determined by IPSC and discussed as an offset to the additional costs to ABT.

Sincerely yours,

Sal N. Ferrara

Cc: J. Vatsky/Tarkel Larson

**IP7\_028003**

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 8/24/2004 7:09 41 AM  
**Subject:** Re: Burner Back charges

Good work Howard. The three of us will have a quick chat about the details before ABT shows up on the 1st.

>>> Howard Hamilton 8/23/2004 4:39:14 PM >>>

Attached find a summary sheet for \$28,700 worth of Back charges to ABT Burners.

I have also put together a set of back up documentation for the Back charges including time sheets, summary cost sheets, material and tool invoices, and photos, email and drawings where required.

I will have Reproduction make five sets of the attached documentation for use in the 9/1/04 ABT meeting.

**CC:** Phil Hailes

**IP7\_028004**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "James Nelson" <JIM-N@ipsc.com>, "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/2/2004 9:53:30 AM  
**Subject:** RE: IPSC Contract 04-45606

I will be obtaining and providing you daily updates on the JMS work/shipping status.  
Sal

-----Original Message-----

From: James Nelson [mailto:JIM-N@ipsc.com]  
Sent: Tuesday, March 02, 2004 11:11 AM  
To: <"Salvatore Ferrara"; Howard Hamilton  
Cc: tarkel@advancedburner.com; Phil Hailes  
Subject: Re: IPSC Contract 04-45606

This makes me extremely nervous. We need daily update and confirmation as to ship date of all diffusers with the remaining hardware (ceramic, etc) and we need to coordinate this with TEI asap. There could very well be costs from the installer for holding up his installation plan. These are very late. He already has two rows of burners installed and expect all burners will be in place before the end of the week.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 3/2/2004 8:31:18 AM  
>>>

Howard,

The first shipment of 12 HFD's were picked up yesterday at the JMS shop in Latrobe, PA. Attached are the shipping documents. We contacted ABF Freight today and they promised delivery to IPP this Friday by 5:00 PM.

JMS had problems obtaining ceramic materials to complete the work by end of last week. They have all ceramic on hand now and are expediting completion. I'll let you know later today when the next shipment is expected to be leaving the JMS shop. We'll try to make a shipment each day in order to maintain a steady flow of HFD's to keep your installers going.

Sal

**CC:** <tarkel@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>

**IP7\_028005**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/2/2004 2:57:09 PM  
**Subject:** Contract 04-45606, HFD Shipment

Howard,

See attached paperwork for shipment that was picked up at JMS today. These were shipped by ABF's express service "TimeKeeper Service". I expect at least 4 more HFD's to be ready to ship tomorrow.

Sal

**CC:** "Tarkel Larson" <tarkel@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>

**IP7\_028006**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/2/2004 10:41:55 AM  
**Subject:** HFDs (Horizontal Fuel Deflectors)

ABT is shipping the 48 fuel deflectors we need for the Unit 2 Burners via ABF Freight Company on 12 Pallets.

ABFs PRO# is 310214050.

ABF tracking shows that 12 pallets were shipped on Monday March 1st with an ETA of Friday, March 5th.

Presently our shipment is in Daytona, Ohio being unloaded.

Sal: As important as this shipment is why was it not sent direct on a dedicated truck. Having to load and unload the shipment will cost days in time.

Pam: As soon as this shipment hits Post 3 have the guard call me. Thanks.

**CC:** Gary Goold; James Nelson; Phil Hailes; sal@advancedburner.com; ssteede@teiservices.com; Tarkel Larson

**IP7\_028007**



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/2/2004 8:35:22 AM  
**Subject:** IPSC Contract 04-45606

Howard,

The first shipment of 12 HFD's were picked up yesterday at the JMS shop in Latrobe, PA. Attached are the shipping documents. We contacted ABF Freight today and they promised delivery to IPP this Friday by 5:00 PM.

JMS had problems obtaining ceramic materials to complete the work by end of last week. They have all ceramic on hand now and are expediting completion. I'll let you know later today when the next shipment is expected to be leaving the JMS shop. We'll try to make a shipment each day in order to maintain a steady flow of HFD's to keep your installers going.

Sal

**CC:** "Tarkel Larson" <tarkel@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>

IP7\_028008

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/2/2004 7:47:57 AM  
**Subject:** RE: Final Report on Burner Pitot Tube Leaks

Howard,  
We don't have quatro pro software. Please mail me the list.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Monday, March 01, 2004 6:53 PM  
To: sal@advancedburner.com  
Subject: Fwd: Final Report on Burner Pitot Tube Leaks

The format is Quatro Pro.

>>> Howard Hamilton 3/1/2004 12:44:47 PM >>>  
Attached is the final listing of all of the leaks.

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 3/2/2004 11:41:43 AM  
**Subject:** RE: HFDs (Horizontal Fuel Deflectors)

Howard,  
I just realized this morning that an express delivery wasn't requested and delivery would have been next Monday. I then had JMS get in touch with ABF and change the status to express, hence the truck change in Ohio. The remaining shipments will be express delivery.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, March 02, 2004 12:42 PM  
To: Pam Snyder  
Cc: sal@advancedburner.com; tarkel@advancedburner.com; Gary Goold; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: HFDs (Horizontal Fuel Deflectors)

ABT is shipping the 48 fuel deflectors we need for the Unit 2 Burners via ABF Freight Company on 12 Pallets.

ABFs PRO# is 310214050.

ABF tracking shows that 12 pallets were shipped on Monday March 1st with an ETA of Friday, March 5th.

Presently our shipment is in Daytona, Ohio being unloaded.

Sal: As important as this shipment is why was it not sent direct on a dedicated truck. Having to load and unload the shipment will cost days in time.

Pam: As soon as this shipment hits Post 3 have the guard call me.  
Thanks.

**CC:** <tarkel@advancedburner.com>, "Gary Goold" <GARY-G@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

IP7\_028010

ABF FREIGHT

24-011-3  
3-2-04

INTERMOUNTAIN GENERATING STATION FROM JMS FABRICATED SYSTEMS  
550 WEST BRUSH WELLMAN ROAD Street 201 HILLVIEW AVENUE  
DELTA, UTAH 84624 High LATROBE PA 15650  
ATTN: JAMES NELSON Vehicle  
Storage, Description of Articles, and Remarks  
2 SKIDS CERAMIC LINED STEEL 1300\* 50

CONTRACT # 04-45666  
CALL 24 HOURS PRIOR TO DELIVERIES  
DELIVERY M-S 7:00 A.M. - 5:00 P.M.  
A.B.T. A03-008-417  
PHONE # 435-864-6670

ABF TIME SAVER QUOTE # 4TN3100624

ABF FREIGHT SYSTEM  
310 215 649

HP CODE

Driver signature only acknowledge receipt of freight  
Shipment is subject to applicable terms and conditions  
of Uniform Freight Bill of Lading and ABF's tariffs



COD

REMIT  
COD TO  
ADDRESS

QUOTED  
FREIGHT  
DATE

DATE

DATE

SHIPPER

PER

Permanent post office address of shipper

CARRIED

PER

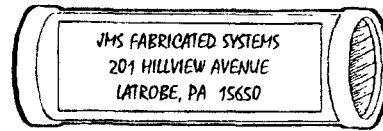
DATE

MAINTAIN WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS  
For further details on SHIPPING HAZARDOUS  
MATERIALS see Federal Regulations 49 CFR  
Part 172

TOPS FORM 1-3845 (4-7-03)

1

IP7\_028011



PH: 724-537-6365 FAX: 724-537-7281  
E-MAIL: jims&jmsind.net

## PACKING LIST

**JMS Job #24-011**

**Date: 03/02/04**

**SHIP TO:** Intermountain Generating Station  
850 West Brush Wellman Road  
Delta, Utah 84624  
Attn: James Nelson  
Contract #04-45606  
Intermountain Station Phone: 1-435-864-6670

**A.B.T. PO #A03-008-417**

**SHIPPED VIA: ABF Freight - Prepaid & Add**

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	02	Opti-Flow Burner Horizontal Fuel Distributor Deflector Assembly per A.B.T. Drawing #03008-500-A02-D0.
Quantity Back Ordered = 34		

IP7\_028012

ABF FREIGHT  
1724-836-6605 24-011-2  
31-04

TO INTERMOUNTAIN BARRIER SYSTEMS Shipper		FROM JMS FABRICATED SYSTEMS	
Street 850 WEST BRUSHWALMAN ROAD		Street 201 HILLVIEW AVENUE	
City DELTA, UTAH		City LATROBE PA	
Zip Code 84024		Zip Code 15650	
Shipper's Name ATTN: JAMES NOBLE		Shipper's Name EMERGENCY RESPONSE PROGRAM	
Special Marks and Exceptions 12 SKIDS		Special Marks and Exceptions 7800# 50	
Description of Articles CERAMIC LINED STEEL		Description of Articles CERAMIC LINED STEEL	

CONTRACT # 04-45606  
CALL 24 HRS PRIOR TO DELIVERIES  
DELIVERY M-S 7:00 A.M. - 5:00 P.M.  
A.B.T. # A03-008-417  
PHONE # 435-864-6670

ABF Volume Quote # RH23100614-A

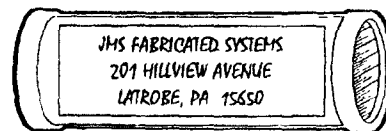
ABF REFERENCE CODE  
310 214 050

SHIPPER'S SIGNATURE  
3/1/04

SHIPPER'S ADDRESS  
3/1/04

REMIT COD TL ADDRESS		COD FILE PREPAID COLLECT \$	
TOTAL		TOTAL	
CHARGES		CHARGES	
SHIPMENT CHARGES		SHIPMENT CHARGES	
TARIFF CHARGES		TARIFF CHARGES	
INSURANCE CHARGES		INSURANCE CHARGES	
TOTAL		TOTAL	
SHIPPER'S SIGNATURE		SHIPPER'S SIGNATURE	
DATE		DATE	
SHIPPER'S NAME		SHIPPER'S NAME	
SHIPPER'S ADDRESS		SHIPPER'S ADDRESS	
SHIPPER'S PHONE		SHIPPER'S PHONE	
SHIPPER'S FAX		SHIPPER'S FAX	
SHIPPER'S E-MAIL		SHIPPER'S E-MAIL	
SHIPPER'S WEBSITE		SHIPPER'S WEBSITE	
SHIPPER'S CARRIER		SHIPPER'S CARRIER	
SHIPPER'S PER		SHIPPER'S PER	
SHIPPER'S DATE		SHIPPER'S DATE	
SHIPPER'S NAME		SHIPPER'S NAME	
SHIPPER'S ADDRESS		SHIPPER'S ADDRESS	
SHIPPER'S PHONE		SHIPPER'S PHONE	
SHIPPER'S FAX		SHIPPER'S FAX	
SHIPPER'S E-MAIL		SHIPPER'S E-MAIL	
SHIPPER'S WEBSITE		SHIPPER'S WEBSITE	

MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS  
For further details on SHIPPING HAZARDOUS MATERIALS see Federal Regulations 49 CFR, Part 172



PH: 724-537-6365 FAX: 724-537-7281  
E-MAIL: jims&jmsind.net

---

## PACKING LIST

**JMS Job #24-011**

**Date: 03/01/04**

---

**SHIP TO: Intermountain Generating Station**  
850 West Brush Wellman Road  
Delta, Utah 84624  
Attn: James Nelson  
Contract #04-45606  
Intermountain Station Phone: 1-435-864-6670

---

**A.B.T. PO #A03-008-417**

---

**SHIPPED VIA: ABF Freight – Prepaid & Add**

---

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	12	Opti-Flow Burner Horizontal Fuel Distributor Deflector Assembly per A.B.T. Drawing #03008-500-A02-D0.

---

IP7\_028014

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/24/2004 11:31:42 AM  
**Subject:** Fwd: Modifying ABB Packing Gland

Give to Isely:

>>> Howard Hamilton 2/24/2004 11:26:40 AM >>>

IPSC has requested TEI to modify the packing gland for one burner as follows:

1. Take the cap off the 3" schedule 160 pipe sent in by ABB and place it on the 3" schedule 40 pipe that ABT placed on the burner front for the ABB Scanner.
2. Drill three holes in the 3" schedule 40 pipe and drill and tap the pipe so that the 3/8" positioning bolts supplied with the ABB packing gland can be installed.

Questions:

1. ABB used schedule 160 pipe in their packing gland assembly for a reason. Possibly to provide a thicker wall for the 3/8" alignment bolt to be threaded into.

Will it be okay to drill and tap the thinner wall schedule 40 pipe or will it need to be beefed up?

Will it be necessary to weld 3/8" bolts to the schedule 40 pipe to allow for more torque in the 3/8" alignment bolts?

2. Is it okay to torque down the packing gland material against a schedule 40 pipe?



**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/18/2004 10:08:21 AM  
**Subject:** Fwd: Tack welding of ABT Burner Throats

Give to Isely.

>>> Howard Hamilton 2/18/2004 10:02:29 AM >>>  
Please advise concerning the following.

The attached photos show that CCW 12, CCW 17 and CCW 09 were received with only a tack weld on the outer burner throat longitudinal seams.

This is the first burners to have been fabricated this way.

The burners started out with a full penetration weld ground smooth inside and out, then this evolved into a stitch weld inside and out and now we have a stitch weld inside and a tack weld outside.

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 2/18/2004 10:02:29 AM  
**Subject:** Tack welding of ABT Burner Throats

Please advise concerning the following.

The attached photos show that CCW 12, CCW 17 and CCW 09 were received with only a tack weld on the outer burner throat longitudinal seams.

This is the first burners to have been fabricated this way.

The burners started out with a full penetration weld ground smooth inside and out, then this evolved into a stitch weld inside and out and now we have a stitch weld inside and a tack weld outside.

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com; Tarkel Larson

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/18/2004 12:08:59 PM  
**Subject:** Delivery of Parts and Materials for Coal Valve and Burner Elbow

Darrell please advise Jim Roberts of the Following:

1. Alan Dewsnup is making arrangements for the delivery of parts and materials for the Coal Valves and Burner elbows for Thursday, February 26th.
2. Alan will see that the parts and materials are delivered to TEI's Trailer on pallets Thursday, February 26th. Jim will need to make arrangements to have it taken into the building from this point.

The following parts and materials will be delivered next Thursday (2/26/04):

1. 48 gaskets 13236 located on the lower end of the coal valve between the coal valve and burner piping flange.

Note: Alan advised that the gaskets are scheduled to arrive on site Wednesday, February 25th.

2. 48 gaskets 13223 located on top of the ceramic valve seat 13099 that is located on top of the coal valve. Alan advised that the gaskets are on site and binned in the GSB Warehouse.
3. 48 gaskets 13220 located on the bottom of the ceramic valve seat 13099 that is located on top of the coal valve. Alan advised that the gaskets are on site and binned in the GSB Warehouse.
4. 48 ceramic valve seats 13099 located on top of the coal valve and sandwiched between the gaskets in item 2 and 3 above. Alan advised that the ceramic valve seats are on site and binned in the GSB Warehouse.
5. 3 five gallon buckets of Hi-Temp RTV to be used to place the VFDs. Alan has six buckets or 30 gallons available if required.
6. 6 cans of anti-seize. We will required that all bolts be given an application of anti-seize. Alan advises that there is more in stock if required.
7. 4 gallons of glue to be used to hold the gaskets listed above in place. Alan advises that there is more in stock if required.
8. 48 throw away brushes to be used to apply the glue to the gaskets called out above.
9. 6 Utility brushes to apply anti-seize to the bolts.
10. 24 five gallon plastic buckets to store bolts, nuts and washer taken off the 48 elbows and coal valves.
11. 4 trowels for the application of Hi-Temp RTV to the coal elbows.
12. A bundle of rags for clean up of the RTV, glue and anti-seize.

Note: The swing valve plates 58875 and the rubber ring sets 10686 that fit into them will not be release by Alan until he has done and inspection of the 48 coal valves on Monday, March 1.

**IP7\_028018**

Maintenance is working this week to have 24 valve plates 58875 ready to go by the outage. Alan anticipates the 48 required rubber ring seats will be on site by the end of today.

Note: The bolts, nuts and washers for the upper end of the coal elbow are to be provided by ABL. Presently this material along with the VFDs and HFDs will not arrive until next week sometime.

Alan: I increased the anti size from what we discussed, because of the fasteners to the pup and the rags were added for cleanliness.

**CC:** Alan Dewsnap; Hugh Loukinas

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/11/2004 1:00:41 PM  
**Subject:** Fwd. RE: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Darrell: I'll bring over 3 copies of the attached drawing

Hugh: I's place a copy of the drawing on your desk.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/11/2004 11:02:25 AM >>>

Howard,  
See my responses below.  
Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Tuesday, February 10, 2004 4:10 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: RE: Questions and requests Concerning Vertical FuelDistributor(VFD)

1. Is the holder made out of hi carbon or low carbon steel. This will have and effect on the welding procedure.  
Response: A36, medium carbon.

2. Drawing 3008-500-A00-0 was help. Could you send 3008-500-A01-0, 3008-500-A00-D01, 3008-500-A00-D02  
Response: These are shop fabrication details that we don't supply to customers. However attached is the -A01 drawing you asked for that gives the steel shell dimensions that should help you.

3. When we last talk back in mid January the VFD and HFD were scheduled to be on site 2/23/04. You were going to see if this schedule could be improved. What is that latest ETA for the VFD , HFD and related hardware.  
Response: Materials and fabrication is on going - kits, cement, VFD, HFD look to be on schedule for delivery on 2/23 but I don't expect they'll to be on site any sooner.

4. The ceramic block is note below as 1" thick and 9" long. How wide is it?  
Response: The tiles have a major width of 2.578" (this with is the back of the tile and sets against the ID of the coal elbow). The tiles have a side angle of 6 deg 26 minutes- this provides the key-arch.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/10/2004 9:18:15 AM  
>>>

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Monday, January 26, 2004 2:11 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: Questions and requests Concerning Vertical Fuel  
Distributor(VFD)

Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:See attached drawing.

2. What material is the VFD made of?

Response:Silicon Carbide Block with Carbon steel holder on outside.

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:see previous answer

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:This is installation contractors responsibility.

5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response:Enough ceramic material needs to be removed to fit the insert.

We don't have detail dimensions of existing ceramic liners.

What is the size and shape of the ceramic to be placed back?

Response:1" thick, standard 9" long ceramic tile with 6 degree angle bevel for self supporting key arch attachment.

Are there just two new pieces of ceramic that fit back into the piped segments and around the VFT?

Response:Pieces will need to be cut to fit depending on size tile liners

removed. We will supply you with four 10" continuous rim diamond impregnated masonry blades for cutting the replacement ceramic tiles.

Are there a bunch of small pieces like floor tiles that need to be placed back?"

Response: See response on size above.

Does the ceramic liner kit have an instruction sheet that you can email or fax?

Response: I will obtain instruction sheet and forward it to you.

Has ABT used these kits on past projects?

Response: Yes.

Does ABT know how many man-hours have been expended to install the kits we have been supplied?

Response: No, this has always been performed by a sub-supplier at a fixed price.

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as bedding and grout". Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response: I will obtain MSDS sheet and forward to you. Note that any RTV required should be supplied by the installation contractor.

What is the differentiation between grout and bedding?

Response: Bedding is set that the tile sits in. Grout is applied in tile seams. This application does not require grout.

**CC:** Hugh Loukinas

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/18/2004 5:11:11 PM  
**Subject:** Fwd: 12th and Last Shipment of Burners

Give to Isely

>>> Howard Hamilton 2/18/2004 5:09:53 PM >>>

Brad from Pacer Transportation called this afternoon and advised me of the following:

1. Pacer has found a trucker out of Wayne, New Jersey to pick up the trailer in Pennsylvania.
2. He will pick up the trailer with the burners and take it to Passaic County Welders arriving at their fabrication facility around 9:00 AM tomorrow.
3. A trucker Ken Rung will be waiting at Passaic County Welder for the trailer with the burners to arrive with his truck and trailer.
4. Passaic County Welders will transfer the load of burners and 32 burner rings to Ken Rung's Truck.
5. Ken will Leave New Jersey upon being loaded with and ETA of Monday sometime.

**IP7\_028023**



**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/18/2004 12:24:55 PM  
**Subject:** Fwd: 12th Load Update

Give to Isely

>>> Howard Hamilton 2/18/2004 12:23:29 PM >>>

Brad at Pacer Transportation called me and advised they have a trucker out of Indiana that they are working with to pick up the 12th load in Pennsylvania. Brad advises that they are tentatively shooting to be on site sometime Monday 2/23/04 with the final load of burners. This could be late in the evening on Monday. Brad asked if the trucker could park out at the gate if they arrive after hours Monday Night. I told Brad that truckers have used a turn out on Brush Wellman Road to park until 7:00 AM in the morning.

Pam: Have the guards direct the driver to this area if they arrive after hours on Monday.

**IP7\_028024**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/20/2004 1:55:46 PM  
**Subject:** Fwd: ABI burner thermocouple installation difficulties

Darrell: FYI

Hugh: Give to Isely.

>>> Jerry Finlinson 2/20/2004 1:51:05 PM >>>  
FYI,

Yesterday, I took one of the thermocouples out and tried sliding it down the thermowells that are installed in the burner.

It would only slide in about 13 inches before hitting a tight bend in the thermowell. Apparently your installers are making some sharp corner bends on the thermowell that's making it very difficult to insert.

Have you tried inserting one?

The type E thermocouples that we have are 3/16 inch diameter and don't bend so easy.

Maybe we'll need to get some 1/8 inch diameter thermocouples.

I noticed that there are some sharp bends on the thermocouple out near the tip as well. The bends are only 10 to 15 degrees, but they have a sharp corner, it would have been better to make it very gradual, then the thermocouple would slide in easily.

Please advise on your recommended solution.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**CC:** Hugh Loukinas

**IP7\_028025**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/4/2004 9:15:40 AM  
**Subject:** Fwd: Burner damage as received at Intermountain

Give to Isely for his information:

>>> James Nelson 1/30/2004 2:39:25 PM >>>

Peter,

I appreciate your response in dealing with the shipping restraint issues.

As you will note in the attached photos the shipping supports on three or four of the first eight burners delivered were buckled under. The damage to the respective plates appears to be only slight. Also at least two of the outer damper actuation rods are bent at the front. ( in the area of the threads). Other contact damage appears at first glance to be slight also.

Joel, Sal, Tarkel:

I spoke with tarkel moments ago. I appreciate Tarkel and Joel getting things underway to address the issue. You are all welcome to inspect them personally at any time you choose. Unless we notify you otherwise we would intend to have TEI correct the problems and settle up with ABT for the cost of repairs. Please let me know of any issues that need to be addressed in order for the corrections to the burners to be made on site.

Please provide any specific guidance you feel would be required in correcting the issues as we have described them and as shown in the attached photographs. We will certainly contact you if we feel we need any guidance in the course of repair.

We will notify you if Howard finds anything more significant with a thorough inspection on Monday. We will get TEI to give a number to repair the affected burner components and let you know what the work will entail.

**IP7\_028026**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/24/2004 12:18:34 PM  
**Subject:** Fwd: Burner Front Sprinkler Piping

Give to Isely.

>>> Howard Hamilton 2/24/2004 12:16:45 PM >>>

After further consideration TEI has decided it will not be necessary to remove the sprinkler piping for the front and rear burners.

IPSC Safety will isolate the burner front sprinkler system and shut it off on Saturday Morning, February 28th.

Should TEI accidentally damage the burner front sprinkler piping during the outage they will notify IPSC immediately so that IPSC Safety can inspect and repair the damage.

**IP7\_028027**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/23/2004 9:04:36 AM  
**Subject:** Fwd: Burner Material Status 2 23-04

Give to Isely:

>>> Howard Hamilton 2/23/2004 9:03:22 AM >>>

1. The 12th and final load of burners are in Green River Wyoming as of 7:15 AM this morning, which is 222 miles from Delta. The trucker Ken Rung should arrive on site around noon today. This truck will have 4 burners and the balance of the 48 seal rings ABT is to send us.
2. Sal Ferrara advises that the VDF's should be on site Wednesday. Used PRO #310216025 at ABF's Web Site and was informed that the truck left Cheyenne, Wyoming with an eta into Salt Lake City around 15:16 today. There are 10 pcs weighing 11,000 pounds. I would assume the pcs are boxes or pallets. This is probable a covered truck. IPSC has an unloading dock out between Warehouse 2 and 3 and arrangements can be made with GSB if required.
3. Sal Ferrara told me today that the fasteners for the HFDs will be sent out UPS. Sal will inform me of the tracking number when it becomes available.
4. Sal Ferrara states that he still does not have an ETA for the HFD's. He will advise me of the PRO # when it becomes available.
5. Sal Ferrara believes the dozen pins to replaced pins that are missing on the outer spin vanes was shipped with the rod replacements. Sal will confirm this and get back to me latter today. If you have seen this box let me know.
6. Jerry Finlinson sent me an email advising that the packing gland fittings for the ABB Scanners was sent out FEDEX on 2/11. Checking the pro number at the FEDEX web site shows that the packing glands were received 2/17/04 by Mason Warnick. Jerry will check this out.

**IP7\_028028**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/4/2004 9:20:25 AM  
**Subject:** Fwd: Burner Replacement Project

For Isley's information.

>>> Alan Dewsnup 2/3/2004 4:33:23 PM >>>

Howard,

B & W has confirmed that the Burner Mounting Sleeve, item "AL" on drawing no. 269375E is made of mild steel, SA 106B.

Alan

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/10/2004 9:23:10 AM  
**Subject:** Fwd: FW: Questions and requests Concerning the removal and installation of the existing B&W Oil Ign

Give to Isely

>>> Howard Hamilton 2/10/2004 9:21:04 AM >>>  
Darrell:

This is a summary of the responses below:

1. ABT is referencing B&W drawing 294359E for burner and lighter dimensions not 29435E.
2. The weld between the lighter shroud and the burner front plate is P1 to P1 something we did not know previously.
3. The front of the CFA lighter shield is to be set back 5-1/4" from the centerline of the boiler which is the dimension called out on B&W 294359E.
4. The angle and dimension with respect to the burner centerline for the CFA Lighter are to be set by the holes provided in the ABT burner. It would appear there are no dimensional checks for the CFA lighter other than locating the tip of the lighter as called out above. Simply center the CFA lighter in the ABT Bunnerr hole cut for it and all will work out.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/9/2004 11:16:38 AM >>>

Howard,

See our responses added below.

Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

> Sent: Monday, January 26, 2004 4:24 PM

> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

> Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

> Subject: Questions and requests Concerning the removal and  
> installation of the existing B&W Oil Igniter

>

> Reference Drawing 03008-100-A02-D0 entitled, "Field Assembly":

>

> 1. Removal and installation note on drawing 03008-100-A02-D0 states,

> "Install Oil Lighter per this drawing and B&W Drawing 29435E."

>

> I have been able to locate B&W Drawing 294359E that is a sectional  
> assembly drawing for the existing Mark V B&W Burners.

>

> I assume that ABT meant to reference drawing 294359 in note 19, is  
this

> correct?

>

IP7\_028030

> Response  
> We meant to reference B&W Drawing 294359E

> 2. Section A-A on Drawing 03008-100-A02-D0 calls out a 3/16" fillet  
> seal weld for attaching the old B&W igniter to the new ABT Burner  
Front  
> Plate.  
>  
> What is the front plate of the new ABT Burner made out of?  
>

> Response: A36 carbon Steel  
>  
> What is the P number and ASME material designation for the ABT front  
> plate?  
>  
> Response: ABT does not use pressure part specifications for  
non-pressure  
parts. All of our welds are carbon steel to carbon steel unless noted  
otherwise.

>  
> The lighter sleeve that is shown welded to the ABT front plate is made  
> of carbon steel.  
>  
> What type of welding rod is required and is preheat or post heat  
needed  
> for this weld?  
>  
> Response: Welding procedures are to be provided by the welding  
contractor,  
not the equipment supplier.  
>

> 2. B&W drawing 294359E calls for the CFA lighter to be horizontal  
where  
> ABT Drawing 03008-100-A02-D0 calls for the CFA lighter to be at an  
> angle.  
>  
> What is the horizontal angle of the B&W CFA lighter in the new ABT  
> Burner?  
>  
> Response: This is not a replacement in kind burner. The igniter is to  
be  
installed in the indicated position on the burner. The burner components  
are  
designed to set the proper angle of the igniter.



>  
> 3. B&W drawing 294359E calls for the face of the CFA lighter shield to  
> be located back from the centerline of the boiler wall 5 1/4". ABT  
> Drawing 03008-100-A02-D0 does not call out this end limiting  
> dimension.  
>  
> Where does ABT want to locate the face of the CFA lighter shield with  
> respect to the centerline of the boiler wall?  
>  
> Response: Use the B&W dimension.

>  
> 4. B&W drawing 294359E calls for a distance from the centerline of the  
> burner to the centerline of the lighter to be 16-15/16" at both the  
> front and rear ends of the lighter, which also tells one that the  
> lighter is horizontal. ABT Drawing 03008-100-A02-D0 does not call out  
> a  
> distance from centerline dimension for either the front or rear of the  
> lighter.  
>  
> What dimension from centerline does ABT want to locate the CFA lighter  
> both front and rear end of same?  
>  
> Response: See above.

>  
> 5. Does ABT require any field alteration to the burners, such as  
> trimming vanes?  
>  
> Response: No.  
>  
>  
>  
>

From: Howard Hamilton  
To: Hugh Loukinas  
Date: 2/10/2004 8:33:37 AM  
Subject: Fwd: FW: Questions Concerning Item 10 on Drawing 03008-100-A02-D0

Give to Isely

>>> Howard Hamilton 2/10/2004 8:26:00 AM >>>

Darrell: The following is a summary of the ABT responses below:

1. ABT will be supplying rings rolled from L2"x2"x1/4" to replace the 1/4" plate hoop Item 10 on ABT drawing 03008-100-A02-D0. By this email and previous voice mail Sal Farrar of ABT is being ask for and eta for these hoops. When I have and ETA for the replacement hoops I will contact you.

2. The front plate of the burner is made out of A36 material. We now that the front plate, hoop and windbox are make out of A36. Thus P1 to P1 Welding procedures will be in effect for these welds.

3. ABT will not provide P numbers but they are required to provide the ASTM specification for the materials we are welding to. As a courtesy I thought they might provide suggested welding rod and preheats. At is it mild steel their input is not required.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/9/2004 11:06:01 AM >>>

Howard,

See our responses added below.

Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

> Sent: Monday, January 26, 2004 6:23 PM

> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

> Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

> Subject: Questions Concerning Item 10 on Drawing 03008-100-A02-D0

>

> 1. B&W drawing 294359E calls for the hole in the windbox to accommodate

> the burners to have a diameter of 78 1/4". ABT Drawing 03008-100-A02-D0

> calls out item 10 to be a carbon steel (A36) bar hoop 78 1/4" ID, 2 3/4"

> wide and 1/4" thick. This means that the only overlay onto the windbox

> that ABT is depending on is the 1/4" thickness of the hoop (OD 78 3/4").

>

> This appears to be a very close shave considering if the burner has to be moved up down or side ways more than 1/4" the hoop and the hole will

> have a gap that will need to be addressed.

>

> My Question is what happens if a sizable gap (say 1/2") is unavoidable

IP7\_028033

> between hoop and windbox?  
>  
> Response: You are correct. We will supply rings rolled from 2 x 2 x  
1/4"  
angles to replace the hoop.  
>  
> 2. In Detail C on Drawing 03008-100-A02-D0 ABT has shown that a 3/16"  
> fillet seal weld is required between Item 10 and the windbox. Since  
both  
> material are A36 we can figure a required welding procedure.  
>  
> In Detail C on Drawing 03008-100-A02-D0 ABT has shown a 3/16" fillet  
> seal weld between item 10 and the ABT burner front plate. The drawing  
> calls out item 10 to be A36, but the front plate is not addressed.  
>  
> What is the front plate made out of?  
>  
> Response: A36  
  
>  
> What is the P-number and ASME designation for the burner front plate.  
>  
> Response: ABT does not use pressure part specifications for  
> non-pressure parts. All of our welds are carbon steel to carbon steel  
unless noted otherwise.  
>  
>  
> What welding rod does ABT recommend and is preheat or post heat  
> required?  
> Response: Welding procedures are to be provided by the welding  
> contractor, not the equipment supplier.

**From:** Howard Hamilton  
**To:** [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Date:** 2/10/2004 3:43:26 PM  
**Subject:** Fwd: FW: Questions concerning item 11 on drawing 03008-100-A02-D0

Darrell:

My summary of ABT's response below is as follows:

1. The burner throat ring provided by ABT is to weld directly to the casing ring on the boiler wall panels.
2. To accomplish the weld in item 1 the stainless steel B&W throat sleeve will need to be removed.
3. the weld is P1 to P1 to attach the ABT throat ring to the boiler wall panel casing ring.
4. There is to be no packing applied to the burner throat ring.
5. The burner is not to be welded to the burner throat ring so that it can freely move on this ring.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/9/2004 11:09:38 AM >>>  
Howard,  
See our answers below.  
Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
> Sent: Tuesday, January 27, 2004 1:09 PM  
> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
> Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
> Subject: Questions concerning item 11 on drawing 03008-100-A02-D0

>  
> 1. Item 11 on drawing 03008-100-A02-D0 is made out of A36 steel. This  
> same casing ring on B&W's existing burner is made out of stainless  
steel  
> TP 304.

>  
> Why can ABT use mild steel ?

>  
> Response. We have used C.S. in all of our instalations and have no  
reported  
problems.

>  
> 2. Attached photo shows that there is a sizeable gap between Item 11  
> and the burner throat. B&W placed Kaowool rope packing to seal this  
gap  
> in the existing burners.

>  
> Does ABT require that this gap be sealed and if not, why and if so  
with  
> what?  
>

**IP7\_028035**

> Response: Please remember this is not a replacement in kind. Our burner is different from the OEM in many ways, both in improved performance and durability. The gap is deliberate and supplies a stream of air that will keep the throat cool during out of service conditions.>

> 3. Item 11 is called out as "shipped with unit" in its description on drawing 03008-100-A02-D0. This would indicate that it is shipped loose

> or only tack welded to the burner as item 10 is called out to be in removal and installation note 8.

> Is Item 11 unattached to the burner throat during operation allowing the burner to expand and contract without restriction?

> Response:

> Is Item 11 welded to the burner throat or just tack welded?

> Response:

> If Item 11 is only tack welded to the burner throat do these tacks need to be broken to allow burner movement?

> Response:

> 4. Item 11 is not called out in the Removal and Installation Notes. Does ABT have a recommended sequence for the welding of Item 11.

> Response: Item 11 is tacked to the burner throat for shipment. the tacks should be cut before installation of the burner, to allow free motion between the burner and the throat.

A note will be added to the drawing specifying this, as well as the welding of the ring to the existing wallbox.

> 5. In B&W drawing 294359E the throat sleeve casing (Item e) is shown welded to the casing weld ring which is welded to the boiler wall tubes.

> Is item 11 welded to the throat sleeve casing (Item e) or the casing weld ring?

> Response:> Does ABT require that the throat sleeve casing (Item e) be cut flush

> with the casing weld ring so that item 11 can be welded to the casing  
> weld ring?

>

> Response: The casing ring(B&W item E), should be removed so that our  
ring

can weld to the casing weld ring.

We will add this to the installation notes.

>

>

>

**CC:** Hugh Loukinas

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/10/2004 4:08:53 PM  
**Subject:** Fwd: FW: Questions Concerning Removal and Installation Note 16

Darrell: FYI

>>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/9/2004 11:13:50 AM >>>>

Howard,

See our answers added below. Some of these questions were asked previously and answered in which case I skipped on the responses to those.

Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

> Sent: Wednesday, January 28, 2004 1:42 PM

> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

> Cc: Jerry Finlinson; James Nelson; Phil Hailes;

[ssteede@teiservices.com](mailto:ssteede@teiservices.com)

> Subject: Questions Concerning Removal and Installation Note 16

>

> Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary,

> reposition the burner to fit up with the fuel line?

>

> 1. Removal and installation note 10 calls for the distance from

> centerline of furnace wall to end of fuel distributor tip to be

> 18-5/8". Should the burner have to be moved in or out along its  
> longitudinal axis this dimension will have to be changed.

>

> How far can we reduce this dimension by moving the burner toward the

> boiler?

>

> Response:

>

> How far can we increase this dimension by moving the burner away from

> the boiler?

>

> Response:

>

> 2. The ring support ( item number 10) has not been welded out to the

> windbox prior to note 16 (see note 17) but has been welded out to the

> burner front plate see note 12 and 13. This will prevent the burner  
> from

> being moved in toward the boiler. It would appear that ABT does not  
> want

> to reduce the 18-5/8" dimension noted above.

>

> Should fit up require that the burner be moved toward the boiler how  
> is

> this to be accomplished?

>

> Response:

**IP7\_028038**

>  
> 3. Note 17 on ABT Drawing 03008-100-A02-D0 states, "Finish welding  
> burner front and support ring". This is a repeat of the weld called  
out  
> in note 13 which states, "Finish welding burner front plate in place".  
>  
> Should this note read, "Finish welding burner support ring to boiler  
> windbox"?  
>  
> Response:  
>  
> Did ABT intend to weld the burner support ring to the boiler wind box  
> in note 13 and the burner front plate to the burner support ring in  
note  
> 17?  
>  
> If this is the case the burner would not be prevented from being moved  
> in toward the boiler by the burner support ring.  
>  
> Response. The welding sequence will be rewritten to call for tack welds  
prior to installation of the elbow.  
completing the welding will be one of the last items.

>  
> 4. If item 11 is welded to the burner throat the burner cannot be  
moved  
> toward the boiler for any adjustments.  
>  
> Should fit up require that the burner be moved toward the boiler how  
is  
> this to be accomplished?  
>  
> Response: Rigging is by the installation contractor, not by ABT.

>  
> 5. The welding of item 11 to the boiler casing (3/16" fillet 1" on  
18")  
> is not called out in the removal and installation notes.  
>  
> When does TEI recommend that this weld be made?  
>  
> Response. These items were asked in a previous e-mail. See it for a  
response.

>  
> 6. Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary,  
> reposition the burner to fit up with the fuel line?"  
>  
> I have addressed concerns for moving the burner to or away from the



> boiler above  
>  
> Concerns about moving the burner up and down and side to side are  
> addressee here.  
>  
> If the burner has to be moved up or down or side to side this will  
> change the centering of the burner called out in note 10 which states  
> "Center burner in wall opening and level and plumb burner.  
>  
> What field reference does ABT expect to be used to determine if the  
> burner is centered to the wall opening?  
>  
> Response: An equal space between the tubes forming the opening and  
the  
outside of the throat.

>  
> How far off from this field reference can we be if we have to move the  
> burner to make the fuel connection.  
>  
> Note 10 requires the burner to be level and plumb?  
>  
> If adjustment have to be made to make up to the fuel line, will the  
> burner have to remain level and plumb or can it be tilted a little to  
> accomplish this fit up?  
>  
> Response. If everything was built to print, and not distorted during  
operation, the ability to move the burner would not be required.  
We added this so that the fit between the burner and the existing  
coal pipe  
could be accomplished with a minimum of field effort.  
I apologize for the inconsistent sequence of welding, but the intent  
should  
have been quite clear. The burner can be shifted to some degree to  
accommodate the existing pipe location.

If conditions are close to the drawing information provided to us, this  
discussion is moot. If they are not then we will address the problems  
when  
we have been provided enough information to make a decision.

>  
> If it can be tilted by how much and what is the point of reference?  
>  
> Response.  
>  
> Any of the welds called out for item 11 and the welds called out for  
> item 10 as shown in Detail C will not allow up, down or side to side  
> adjustments to be made if required to make the fuel connection.  
>  
> It would appear that only tack welds should be made until after the  
> burner has been made up to the fuel connection.  
>

> Would ABT have a problem of only making tack welds until after the  
fuel  
> connection has been made?  
>  
> Response.  
>  
> The removal and installation note 21 states "Make all oil and steam  
> connections."  
>  
> This should read "Make all oil and air connections."  
>  
> Response: We will correct this. the information supplied was not clear  
on  
the atmozing fluid.  
>  
>

**CC:** Hugh Loukinas

From: Howard Hamilton  
To: ssteede@teiservices.com  
Date: 2/11/2004 1:11:52 PM  
Subject: Fwd: FW: Questions Concerning The Horizontal Fuel Distributor (HFD)

Darrell. FYI

Hugh: Give to Isely

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/9/2004 4:03:35 PM >>>

Howard,

See our answers below.

Sal

> -----Original Message-----

> From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

> Sent: Monday, January 26, 2004 5:37 PM

> To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

> Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

> Subject: Questions Concerning The Horizontal Fuel Distributor (HFD)

>

> Reference Drawing 03008-500-A02-D0 entitled, "Horizontal Fuel

> Distributor Assembly."

>

> 1. Drawing 03008-500-A02-D0 appears to show that the HFD simply fits

> inside the coal elbow.

>

> Will alterations need to be made to the ceramic in the coal elbow to

> accommodate the HFD or has enough tolerance been allowed to avoid

> having

> to alter the existing ceramic in the coal elbow?

>

> Response:No

>

> 2. Items 2 and 3 in drawing 03008-500-A02-D0 are called out to be made

> of Alumina.

>

> What is Alumina is it a ceramic or some type of metal?

>

> Response:Alumina is a ceramic.

>

>

> 3. Is Alumina fragile and will special precautions need to be taken

> to

> keep from chipping or breading it?

>

> Response: Handle it carefully. It is not as fragile as glass, but any

> sharp

> impact can damage it.

>

> 4. Should the Alumina of any of the 48 HFD's be chipped, cracked or  
> broken can they be repaired in the field

>  
> Response: If this happens contact us with specifics  
>

> 5. What type of repair will need to be made to restore a piece of  
> alumina that been chipped, cracked or broken?

>  
> Response: See above

>  
> 6. Will the bolts, nuts, washers and gaskets called out in drawing  
> 03008-100-A02-D0 be sent with the HFD or sent out separately?

>  
> Response: Any item, not noted as "by other" or reuse is supplied by  
ABT.  
>

> 7. If the items listed in "6" are sent separately how will they be  
> shipped, when will they be shipped and to whom are they being shipped.

>  
> Response: They will be shipped from PCW and package identified per the  
drawing.

>  
>  
>

**CC:** Hugh Loukinas

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/4/2004 12:47:02 PM  
**Subject:** Fwd. Gouge in Tubing to Pitot Tube

Give to Isely.

>>> Howard Hamilton 2/4/2004 12:45:03 PM >>>

1/2" 316L stainless steel tubing to Pitot tube has a gouge that was done during fabrication. The gouge appears to have been made with a grinder.

The gouge is deep and appears to be through the tube wall.

TEI advises that they can run a nitrogen purge through the tubing and heli-arc the gouge.

Please review and advise.

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/10/2004 12:27:02 PM  
**Subject:** Fwd: Hi temp red RTV -

Give to Isely

>>> Howard Hamilton 2/10/2004 12:23:10 PM >>>  
Darrell:

This is in response to the requirement that Hi-Temp RTV be used on the back side of the VFD and this material will not be supplied by ABT.

A bucket is 5 gallons so 30 gallons have been set aside for the 48 burners.

When Jim Roberts wants the gaskets, seats and disks for the coal piping he can have this 30 gallons of RTV delivered also. He need only call Alan (6855) and he will order out these parts and RTV and see that they are placed on pallets and delivered to TEI.

>>> Alan Dewsnup 2/10/2004 10:49:20 AM >>>  
Howard, I have ordered against your lead Burner WO 96033-0, (6 ea) buckets of this material. It is staged and ready for delivery when you need it.  
Alan

**IP7\_028045**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/6/2004 5:35:28 PM  
**Subject:** Fwd: I&C Tech for Burner Clearance Work

Give to Isely

>>> Howard Hamilton 2/6/2004 5:33:50 PM >>>

I have been talking with Operations and in particular Bruce McCann concerning the draining of fuel oil from the burner front piping the early morning of Saturday February 28th. After the fire is out in the boiler Operations needs to use the purge air system to flush fuel oil out of the burner front fuel lines.

ABV valves in the fuel lines will need to be forced open on the front and rear burner elevations at the 5th, 6th, 7th and 8th floors. Bruce figures that an I&C technician will be needed to work with an Operator full time from about 2:00 AM on Saturday Morning until all the fuel lines on each of the floors is drained. TEI will start cutting into the lines at 7:00 AM on Saturday Morning in preparation for pulling the old B&W Burners.

Contact Bruce McAnn or I if you have questions.

Thanks,

**IP7\_028046**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/11/2004 2:00:23 PM  
**Subject:** Fwd. IBAM purge air supply

Darrell: FYI

Hugh: Give to Isely

>>> Jerry Finlinson 2/7/2004 8:58:57 AM >>>

Ken/Bill,

This week I walked down IBAM purge air supply with Hank Johnson and Dave Reit GSL. There is a 2 inch air supply header around the boiler on the 5th 7th and 9th LVL's. Dave proposed to use 1.5 inch copper tubing down the front side from 9th floor to pick up all 4 IBAM panels and back side up from 5th floor on 1.5 inch header. It would be more consistent to come down from the 9th floor on both front and rear to make it more consistent. Please let Dave know that.

We'll have a 1" T off the header through filters and 3/4 flex hose to IBAM panel. We thought that in the location of the IBAM panels, it's not so hot, so the 3/4 inch brake hose would make a good flex connection rather than using stainless flex, which costs much more. Dave will purchase the materials for this installation, except the filters, which Jim Knapp has ordered.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**IP7\_028047**



**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/6/2004 4:29:52 PM  
**Subject:** Fwd: Missing Turning Vane Pin

Give to Isely.

>>> Howard Hamilton 2/6/2004 4:26:49 PM >>>

Pin and cotter pin were missing from CW 4 outer spin vane linkage, apparently lost during shipping or staging.

Please send out a couple of dozen extra pins and cotter pins as shown in the attached photos to take care of any other lost pins that may occur.

**IP7\_028048**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/18/2004 3:36:21 PM  
**Subject:** Fwd: Operations Release Date

Give to Isely.

>>> James Nelson 2/17/2004 1:59:29 PM >>>

Just to clarify. The contract states that in order to receive the entire bonus, the unit must be released to Operations by 7:00 am on March 23. The bonus will be prorated thereafter until 7:00 am on March 25th when there will be no bonus paid. The liquidated damages do not begin until end of shift on the on the 26th when all work cards must be turned in. Let me know if there are any questions on how this reads in the contract. thanks

>>> Howard Hamilton 2/17/2004 1:29:50 PM >>>

The "Operations Release Date" is March 23, 2004 at 7:00 AM not the date shown below that was sent out earlier.

>>> Howard Hamilton 2/17/2004 10:19:02 AM >>>

I have talked to James Nelson and have been advised the that the "Operations Release Date" is March 3, 2004 at 7:00 AM.

This is the date that determines whether TEI gets a bonus for beating the schedule or a penalty for not meeting the schedule.

To avoid a penalty TEI must have the burners operational on or before this date.

**IP7\_028049**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/17/2004 1:31:57 PM  
**Subject:** Fwd: Operations Release Date

Give to Isely

The "The Operations Release date is March 23, 2004 at 7:00 AM not the date shown below.

>>> Howard Hamilton 2/17/2004 10:30:04 AM >>>  
give to Isely

>>> Howard Hamilton 2/17/2004 10:19:02 AM >>>  
I have talked to James Nelson and have been advised the that the "Operations Release Date" is March 3, 2004 at 7:00 AM.

This is the date that determines whether TEI gets a bonus for beating the schedule or a penalty for not meeting the schedule.

To avoid a penalty TEI must have the burners operational on or before this date.

**IP7\_028050**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/17/2004 10:30:04 AM  
**Subject:** Fwd: Operations Release Date

give to Isely

>>> Howard Hamilton 2/17/2004 10:19:02 AM >>>

I have talked to James Nelson and have been advised that the "Operations Release Date" is March 3, 2004 at 7:00 AM.

This is the date that determines whether TEI gets a bonus for beating the schedule or a penalty for not meeting the schedule.

To avoid a penalty TEI must have the burners operational on or before this date.

**IP7\_028051**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/6/2004 5:42:27 PM  
**Subject:** Fwd: Outage Burner Front Electrical Clearances

give to Isely

>>> Howard Hamilton 2/6/2004 5:41:16 PM >>>

I talked to Jerry Finlinson today and was advise that he will not be able to talk to you about the burner front clearances until he returns on 2/16/04. He will be out of town all next week.

I told Jerry that you would be back on days on 2/16/04. He will contact you then.

**From:** Howard Hamilton  
**To:** Hugh Loukinas: ssteede@teiservices.com  
**Date:** 2/4/2004 9:44:40 AM  
**Subject:** fwd: outage-pulverizers

Darrell: FYI - Obviously I'm not the one getting the elbows off - but TEI is committed.

Hugh: get a copy to Isely.

>>> Richard Schmit 2/2/2004 7:49:48 AM >>>

Kelly,

Howard said he could get all the elbows and isolation valves off over the first weekend, then you could sign on to all the mills first thing Monday morning. Towards the end of the outage Howard will need a few days to get the isolation valves back in. will this work for you?

Bruce-note for tagging to leave the burner isolation valve tags off the clearances until the blind flanges get put on.

Richard F. Schmidt  
IPSC Operations

**IP7\_028053**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/4/2004 9:36:59 AM  
**Subject:** Fwd: Outage Stuff

For Isley's information.

>>> Bruce McCann 1/31/2004 3:57:53 AM >>>  
Howard

I am the Tagging Coordinator for Outage. Any tagging requests or concerns you might have need to be directed to me so they can be addressed.

I will make arrangements to meet with you and go over in detail the clearances that I will make for burner removal / replacement and any other concerns you might have.

Thanks

Bruce McCann

**IP7\_028054**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 1/27/2004 9:25:19 AM  
**Subject:** Fwd: Questions and requests Concerning the removal and installation of the existing B&W Oil Igniter

Give to Isely for his information.

>>> Howard Hamilton 1/26/2004 2:24:10 PM >>>  
Reference Drawing 03008-100-A02-D0 entitled, "Field Assembly":

1. Removal and installation note on drawing 03008-100-A02-D0 states, "Install Oil Lighter per this drawing and B&W Drawing 29435E."

I have been able to locate B&W Drawing 294359E that is a sectional assembly drawing for the existing Mark V B&W Burners.

I assume that ABT meant to reference drawing 294359 in note 19, is this correct?

Response:

2. Section A-A on Drawing 03008-100-A02-D0 calls out a 3/16" fillet seal weld for attaching the old B&W igniter to the new ABT Burner Front Plate.

What is the front plate of the new ABT Burner made out of?

Response:

What is the P number and ASME material designation for the ABT front plate?

Response:

The lighter sleeve that is shown welded to the ABT front plate is made of carbon steel.

What type of welding rod is required and is preheat or post heat needed for this weld?

Response:

2. B&W drawing 294359E calls for the CFA lighter to be horizontal where ABT Drawing 03008-100-A02-D0 calls for the CFA lighter to be at an angle.

What is the horizontal angle of the B&W CFA lighter in the new ABT Burner?

Response:

3. B&W drawing 294359E calls for the face of the CFA lighter shield to be located back from the centerline of the boiler wall 5 1/4". ABT Drawing 03008-100-A02-D0 does not call out this end limiting dimension.

Where does ABT want to locate the face of the CFA lighter shield with respect to the centerline of the boiler wall?

Response:



4. R&W drawing 294359E calls for a distance from the centerline of the burner to the centerline of the lighter to be 16-15/16" at both the front and rear ends of the lighter, which also tells one that the lighter is horizontal. ABT Drawing 03008-100-A02-D0 does not call out a distance from centerline dimension for either the front or rear of the lighter.

What dimension from centerline does ABT want to locate the CFA lighter both front and rear end of same?

Response:

5. Does ABT require any field alteration to the burners, such as trimming vanes?

Response:

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 1/27/2004 9:26:07 AM  
**Subject:** Fwd: Questions and requests Concerning Vertical Fuel Distributor (VFD)

Give to Isely.

>>> Howard Hamilton 1/26/2004 12:10:35 PM >>>  
Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:

2. What material is the VFD made of?

Response:

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:

5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response:

What is the size and shape of the ceramic to be placed back?

Response:

Are there just two new pieces of ceramic that fit back into the piped segments and around the VFT?

Response:

Are there a bunch of small pieces like floor tiles that need to be placed back?

Response:

Does the ceramic liner kit have an instruction sheet that you can email or fax?

Response:

Has ABT used these kits on past projects?

Response:

Does ABT know how many man-hours have been expended to install the kits we have been supplied?

Response:

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as bedding and grout".  
Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response:

What is the differentiation between grout and bedding?

Response:

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 1/27/2004 9:23:44 AM  
**Subject:** Fwd: Questions Concerning Item 10 on Drawing 03008-100-A02-D0

Give to Isely for his information.

>>> Howard Hamilton 1/26/2004 4:23:18 PM >>>

1. B&W drawing 294359E calls for the hole in the windbox to accommodate the burners to have a diameter of 78 1/4". ABT Drawing 03008-100-A02-D0 calls out item 10 to be a carbon steel (A36) bar hoop 78 1/4" ID, 2 3/4" wide and 1/4" thick. This means that the only overlay onto the windbox that ABT is depending on is the 1/4" thickness of the hoop (OD 78 3/4").

This appears to be a very close shave considering if the burner has to be moved up down or side ways more than 1/4" the hoop and the hole will have a gap that will need to be addressed.

My Question is what happens if a sizable gap (say 1/2") is unavoidable between hoop and windbox?

Response:

2. In Detail C on Drawing 03008-100-A02-D0 ABT has shown that a 3/16" fillet seal weld is required between Item 10 and the windbox. Since both material are A36 we can figure a required welding procedure.

In Detail C on Drawing 03008-100-A02-D0 ABT has shown a 3/16" fillet seal weld between item 10 and the ABT burner front plate. The drawing calls out item 10 to be A36, but the front plate is not addressed.

What is the front plate made out of?

Response:

What is the P-number and ASME designation for the burner front plate.

Response:

Response:

What welding rod does ABT recommend and is preheat or post heat required?

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 1/27/2004 11:12:20 AM  
**Subject:** Fwd: Questions concerning item 11 on drawing 03008-100-A02-D0

Please give to Isely for his information.

>>> Howard Hamilton 1/27/2004 11:09:04 AM >>>

1. Item 11 on drawing 03008-100-A02-D0 is made out of A36 steel. This same casing ring on B&W's existing burner is made out of stainless steel TP 304.

Why can ABT use mild steel ?

Response.

2. Attached photo shows that there is a sizeable gap between Item 11 and the burner throat. B&W placed Kaowool rope packing to seal this gap in the existing burners.

Does ABT require that this gap be sealed and if not, why and if so with what?

Response:

3. Item 11 is called out as "shipped with unit" in its description on drawing 03008-100-A02-D0. This would indicate that it is shipped loosed or only tack welded to the burner as item 10 is called out to be in removal and installation note 8.

Is Item 11 unattached to the burner throat during operation allowing the burner to expand and contract without restriction?

Response:

Is Item 11 welded to the burner throat or just tack welded?

Response:

If Item 11 is only tack welded to the burner throat do these tacks need to be broken to allow burner movement?

Response:

4. Item 11 is not called out in the Removal and Installation Notes.

Does ABT have a recommended sequence for the welding of Item 11.

Response:

5. In B&W drawing 294359E the throat sleeve casing (Item e) is shown welded to the casing weld ring which is welded to the boiler wall tubes.

Is item 11 welded to the throat sleeve casing (Item e) or the casing weld ring?

Response:

Does ABT require that the throat sleeve casing (Item c) be cut flush with the casing weld ring so that item 11 can be welded to the casing weld ring?

Response:

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 1/28/2004 3:05:47 PM  
**Subject:** Fwd: Questions Concerning Removal and Installation Note 16

Give to Isely

>>> Howard Hamilton 1/28/2004 11:42:21 AM >>>

Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary, reposition the burner to fit up with the fuel line?"

1. Removal and installation note 10 calls for the distance from centerline of furnace wall to end of fuel distributor tip to be 18-5/8". Should the burner have to be moved in or out along its longitudinal axis this dimension will have to changed.

How far can we reduce this dimension by moving the burner toward the boiler?

Response:

How far can we increase this dimension by moving the burner away from the boiler?

Response:

2. The ring support ( item number 10) has not been welded out to the windbox prior to note 16 (see note 17) but has been welded out to the burner front plate see note 12 and 13. This will prevent the burner from being move in toward the boiler. It would appear that ABT does not want to reduce the 18-5/8" dimension noted above.

Should fit up require that the burner be moved toward the boiler how is this to be accomplished?

Response:

3. Note 17 on ABT Drawing 03008-100-A02-D0 states, "Finish welding burner front and support ring". This is a repeat of the weld called out in note 13 which states, "Finish welding burner front plate in place".

Should this note read, "Finish welding burner support ring to boiler windbox"?

Response:

Did ABT intend to weld the burner support ring to the boiler wind box in note 13 and the burner front plate to the burner support ring in note 17?

If this is the case the burner would not be prevented from being moved in toward the boiler by the burner support ring.

Response.

4. If item 11 is welded to the burner throat the burner cannot be moved toward the boiler for any adjustments.

Should fit up require that the burner be moved toward the boiler how is this to be accomplished?

Response:

5 The welding of item 11 to the boiler casing (3/16" fillet 1" on 18") is not called out in the removal and installation notes.

When does TEI recommend that this weld be made?

Response.

6. Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary, reposition the burner to fit up with the fuel line?"

I have addressed concerns for moving the burner to or away from the boiler above.

Concerns about moving the burner up and down and side to side are addressed here.

If the burner has to be moved up or down or side to side this will change the centering of the burner called out in note 10 which states "Center burner in wall opening and level and plumb burner."

What field reference does ABT expect to be used to determine if the burner is centered to the wall opening?

Response:

How far off from this field reference can we be if we have to move the burner to make the fuel connection.

Note 10 requires the burner to be level and plumb?

If adjustment have to be made to make up to the fuel line, will the burner have to remain level and plumb or can it be tilted a little to accomplish this fit up?

Response.

If it can be tilted by how much and what is the point of reference?

Response.

Any of the welds called out for item 11 and the welds called out for item 10 as shown in Detail C will not allow up, down or side to side adjustments to be made if required to make the fuel connection.

It would appear that only tack welds should be made until after the burner has been made up to the fuel connection.

Would ABT have a problem of only making tack welds until after the fuel connection has been made?

Response.

The removal and installation note 21 states "Make all oil and steam connections."

This should read "Make all oil and air connections."



Response:

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 1/27/2004 9:24:26 AM  
**Subject:** Fwd: Questions Concerning The Horizontal Fuel Distributor (HFD)

Give to Isely for his information.

>>> Howard Hamilton 1/26/2004 3:37:02 PM >>>

Reference Drawing 03008-500-A02-D0 entitled, "Horizontal Fuel Distributor Assembly."

1. Drawing 03008-500-A02-D0 appears to show that the HFD simply fits inside the coal elbow.

Will alterations need to be made to the ceramic in the coal elbow to accommodate the HFD or has enough tolerance been allowed to avoid having to alter the existing ceramic in the coal elbow?

Response:

2. Items 2 and 3 in drawing 03008-500-A02-D0 are called out to be made of Alumina.

What is Alumina is it a ceramic or some type of metal?

Response:

3. Is Alumina fragile and will special precautions need to be taken to keep from chipping or breaching it?

Response:

4. Should the Alumina of any of the 48 HFD's be chipped, cracked or broken can they be repaired in the field.

Response:

5. What type of repair will need to be made to restore a piece of alumina that been chipped, cracked or broken?

Response:

6. Will the bolts, nuts, washers and gaskets called out in drawing 03008-100-A02-D0 be sent with the HFD or sent out separately?

Response:

7. If the items listed in "6" are sent separately how will they be shipped, when will they be shipped and to whom are they being shipped.

Response:

**IP7\_028065**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/18/2004 8:23:30 AM  
**Subject:** Fwd: RE: ABT Burner Shipping Status

Give to Isely

>>> Howard Hamilton 2/18/2004 8:20:22 AM >>>

Sal this could impact TEI as they will want to start work at the first of the outage installing the VFDs.

When you respond with and ETA please provide the following information:

1. Provide a contact with the trucking company so that we can track the shipment like we have done with Pacer and the burners.
2. Provide information as to where the VFDs, HFDs, and related hardware are coming from and is the shipment to be shipped on a flatbed or be inclosed truck.

Note: James this should address your email requesting the status of the flow straightening devices.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/17/2004 11:58:47 AM >>>

Howard,

We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.

Sal

-----Original Message-----

**From:** Howard Hamilton [<mailto:howard-h@ipsc.com>]  
**Sent:** Tuesday, February 17, 2004 12:27 PM  
**To:** Pam Snyder  
**Cc:** [sal@advancedburner.com](mailto:sal@advancedburner.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); [truckdispatch@aol.com](mailto:truckdispatch@aol.com); James Nelson; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Subject:** ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**IP7\_028066**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/20/2004 2:21:34 PM  
**Subject:** Fwd: RE: ABT Burner Shipping Status

Give to Isely.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/20/2004 2:05:35 PM >>>  
Howard,  
The VFD's and ceramic installation kits shipped today via ABF Freight.  
ABF Time Saver #OFY3100514-A, ABT Freight System 310 216 025. Delivery  
noted on bill of lading to be by 2/25.  
The HFD's will ship by next Friday, 2/27.  
Sal

-----Original Message-----

From: Salvatore Ferrara [<mailto:sal@advancedburner.com>]  
Sent: Wednesday, February 18, 2004 4:13 PM  
To: 'Howard Hamilton'; 'Pam Snyder'  
Cc: 'tarkel@advancedburner.com'; 'truckdispatch@aol.com'; 'James  
Nelson'; 'ssteede@teiservices.com'  
Subject: RE: ABT Burner Shipping Status

Howard,  
The VFD's and ceramic kits will complete by this Friday and we will ship  
them then, as not to impact your planned installation at the first of  
the outage. I'll provide you with the truck information at time of  
shipment.  
I don't know just yet on when next week the HFD's will ship, I'll let  
you know later this week.  
Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Wednesday, February 18, 2004 10:20 AM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com); Pam Snyder  
Cc: [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); [truckdispatch@aol.com](mailto:truckdispatch@aol.com); James Nelson;  
[ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: RE: ABT Burner Shipping Status

Sal this could impact TEI as they will want to start work at the first  
of the outage installing the VFDs.

When you respond with and ETA please provide the following  
information:

1. Provide a contact with the trucking company so that we can track the  
shipment like we have done with Pacer and the burners.
2. Provide information as to where the VFDs, HFDs, and related  
hardware are coming from and is the shipment to be shipped on a flatbed  
or be inclosed truck.

**IP7\_028067**

Note: James this should address your email requesting the status of the flow straightening devices

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/17/2004 11:58:47 AM  
>>>

Howard,

We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Tuesday, February 17, 2004 12:27 PM

To: Pam Snyder

Cc: [sal@advancedburner.com](mailto:sal@advancedburner.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); [truckdispatch@aol.com](mailto:truckdispatch@aol.com); James Nelson; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

Subject: ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**IP7\_028068**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/17/2004 1:36:47 PM  
**Subject:** Fwd: RL: ABT Burner Shipping Status

Give a copy to Isely

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/17/2004 11:58:47 AM >>>  
Howard,  
We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.  
Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Tuesday, February 17, 2004 12:27 PM  
To: Pam Snyder  
Cc: [sal@advancedburner.com](mailto:sal@advancedburner.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); [truckdispatch@aol.com](mailto:truckdispatch@aol.com); James Nelson; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**IP7\_028069**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/23/2004 11:41:03 AM  
**Subject:** Fwd: RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

Give to Isely:

>>> Howard Hamilton 2/23/2004 11:33:13 AM >>>

Darrell: Put together an estimate for all of the materials required to run 3/4" rigid tubing from the Pitot tubes on the burner fronts to the IBAM cabinets. The Pitot tubes at the ABT burner fronts are 1/2 NPT and the connections at the IBAM Cabinets are 1/2" NPT. GSL has the 96 flex hoses that came with the IBAM Cabinets and will deliver them to TEI's Trailer. I do not know what size they are but would guess 1/2" NPT.

I estimate about 4500 LF of 3/4" tubing required for all 48 burners figuring 10.5' between burners and 20 ft from the burner nearest the IBAM Cabinet.

Jerry: TEI's I&E man will be on site Wednesday (2/25/04). He will put together the list of materials required. Darrell will have a material estimate by the end of the week.

>>> Jerry Finlinson 2/23/2004 10:48:21 AM >>>

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/20/2004 2:45:56 PM >>>

Jerry,

Yes, please get a written quote and advise. I think we should stick with the 3/4" copper tube in straight-rigid plumbing grade for use with soldered (sweat) joint connections for all the runs both short and long. It will be simpler and cleaner that way.

Let me know.

Thanks.

Andy

-----Original Message-----

**From:** Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
**Sent:** Friday, February 20, 2004 1:21 PM  
**To:** Andy Chew  
**Subject:** RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

Andy

**IP7\_028070**

My cost of 80 cents per foot was not a real quote.  
I called the local hardware store and he said that 100 ft would be 99 c/ft,  
but it would be much cheaper to order 5000 ft, so maybe we could get it for  
50 c or so. Do you think we should use 1/2 inch on the runs less than 50 ft?  
Would you like me to get a real quote to compare?  
We are talking rigid copper pipe that solders together, right?  
Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/20/2004 2:14:45 PM >>>  
Jerry,

I am getting a quote on our end for the 3/4" tubing to compare with your  
tubing cost of 0.80 cents per foot. If it is less expensive for you to  
supply then we are OK with the option to provide IPSC with a credit against  
future technician labor and/or wind tunnel testing.

I will get back to you on or before Monday 2/23/04.

Thank you.

Andy

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Friday, February 20, 2004 12:25 PM  
To: Andy Chew  
Subject: Re: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO  
NO 50633)

Thanks for the info on the vane position.

I just sent an earlier email before seeing this one.  
Would you like us to put together a list of what tubing we recommend along  
with a cost estimate? If we purchase it, we could use that as a credit  
against  
the calibration labor and the potential wind tunnel testing.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/20/2004 11:04:56 AM >>>

IP7\_028071



Jerry,

I have attached the rev 1 test matrix used for the ABT-IPSC burner testing project. All three spin vane settings listed (30°, 45° and 60°) are in degrees open from the closed position. i.e. 0° is closed and 90° is full open.

Please let me know the spec and cost estimate on your end for the copper tubing you wish to use for the 3/4" hard tubing runs from the burner fronts to the transmitter/purge cabinets.

Thank you.

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

**From:** Howard Hamilton  
**To:** [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Date:** 2/9/2004 4:34:15 PM  
**Subject:** Fwd: RE: Damper Drive Rod - Too Short''

Jim Roberts cranked one as described below this morning. It went the full 16" as ABT indicates below. Problem resolved.

Hugh: Give a copy to Isely.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/9/2004 8:08:08 AM >>>

Howard,

Did you try to continue cranking the ratchet handle once the all thread is flush with the end bracket? It should continue to adjust to the full 16" opening (the all thread should disappear into the bracket/tube). We have internal stops that will make contact once the full 16" opening is achieved. The shop assures me that full stroke was tested upon completion.

Sal

-----Original Message-----

**From:** Howard Hamilton [<mailto:howard-h@ipsc.com>]  
**Sent:** Friday, February 06, 2004 7:06 PM  
**To:** [sal@advancedburner.com](mailto:sal@advancedburner.com)  
**Cc:** James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Subject:** Damper Drive Rod - Too Short?

Attached photos show the outer air damper will not open fully because the damper drive rod is 6" too short.

Please review and advise why the damper is not allowed to open up fully to 16".

**CC:** Hugh Loukinas

**IP7\_028073**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/6/2004 12:21:51 PM  
**Subject:** Fwd: RE: Gouge in Tubing to Pitot Tube

Darrell: Add this to the repair work that will need to be done to the Pitot tubes. We are in contact with ABT and should hopefully have a repair recommendation by next week.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/6/2004 10:02:35 AM >>>

Howard,

We advised the shop to take better care and make sure the remaining burners are checked to insure there aren't any more gouges in tubes. Heli-arc is how we would recommend fixing the gouge. You shouldn't even need a nitrogen purge with an experienced welder.

Sal

-----Original Message-----

**From:** Howard Hamilton [<mailto:howard-h@ipsc.com>]  
**Sent:** Wednesday, February 04, 2004 2:45 PM  
**To:** [sal@advancedburner.com](mailto:sal@advancedburner.com)  
**Cc:** Jerry Finlinson; James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Subject:** Gouge in Tubing to Pitot Tube

1/2" 316L stainless steel tubing to Pitot tube has a gouge that was done during fabrication. The gouge appears to have been made with a grinder.

The gouge is deep and appears to be through the tube wall.

TEI advises that they can run a nitrogen purge through the tubing and heli-arc the gouge.

Please review and advise.

**CC:** James Nelson; Jerry Finlinson; Phil Hailes

**IP7\_028074**

**From:** Howard Hamilton  
**To:** ssteede@terservices.com  
**Date:** 2/11/2004 11:35:27 AM  
**Subject:** Fwd: Req. 200071, Vacuum Truck Rental

Darrell: FYI

Hugh: Give to Isely.

>>> Jeff Schena 2/11/2004 11:29:48 AM >>>

Ralph, Req. 200071 has been entered against Work Order 03-96033-0, Cap. Project for Burner replacement. the req. amount is an estimate based on 5 days rental, give or take a couple of days. I had a conversation with Jim Hartley with Onyx and he indicated that this would be no problem for them. This truck will be used in conjunction with the truck rented on P.O. 04-36849.

Jim came down and walked down the job with Howard Hamilton, TEI, and myself. He agreed to send down the piping and fittings on the 23rd of Feb. so that the piping runs can be setup early to expedite the start of work at the begining of the outage. TEI has requested, through Howard Hamilton, that the trucks be here ready for service the 28th day of Feb. at 7:00 PM. Jim also indicated that this would not be a problem. Call me if you need any more info, thanks for your help.

Jeff  
ext. 6804

**CC:** Hugh Loukinas

**IP7\_028075**

**From:** Howard Hamilton  
**To:** Hugh Loukinas: [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Date:** 2/10/2004 1:54:24 PM  
**Subject:** Fwd. RE: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Darrell: I'll bring over 2 copies of the attached drawing.

Hugh: I'll drop of a copy of the attached drawing on your desk to give to Isely.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/10/2004 9:18:15 AM >>>

-----Original Message-----

**From:** Howard Hamilton [<mailto:howard-h@ipsc.com>]  
**Sent:** Monday, January 26, 2004 2:11 PM  
**To:** [sal@advancedburner.com](mailto:sal@advancedburner.com)  
**Cc:** James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Subject:** Questions and requests Concerning Vertical Fuel Distributor(VFD)

Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:See attached drawing.

2. What material is the VFD made of?

Response:Silicon Carbide Block with Carbon steel holder on outside.

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:see previous answer

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:This is installation contractors responsibility.

5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response: Enough ceramic material needs to be removed to fit the insert  
We don't have detail dimensions of existing ceramic liners.

What is the size and shape of the ceramic to be placed back?

Response: 1" thick, standard 9" long ceramic tile with 6 degree angle  
bevel for self supporting key arch attachment.

Are there just two new pieces of ceramic that fit back into the piped  
segments and around the VFT?

Response: Pieces will need to be cut to fit depending on size tile liners  
removed. We will supply you with four 10" continuous rim diamond  
impregnated masonry blades for cutting the replacement ceramic tiles.

Are there a bunch of small pieces like floor tiles that need to be  
placed back?

Response: See response on size above.

Does the ceramic liner kit have an instruction sheet that you can email  
or fax?

Response: I will obtain instruction sheet and forward it to you.

Has ABT used these kits on past projects?

Response: Yes.

Does ABT know how many man-hours have been expended to install the kits  
we have been supplied?

Response: No, this has always been performed by a sub-supplier at a fixed  
price.

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as  
bedding and grout". Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response: I will obtain MSDS sheet and forward to you. Note that any RTV  
required should be supplied by the installation contractor.

What is the differentiation between grout and bedding?

Response: Bedding is set that the tile sits in. Grout is applied in tile  
seams. This application does not require grout.

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/12/2004 1:56:19 PM  
**Subject:** Fwd: Request of Services

Give to Isely

>>> Howard Hamilton 2/12/2004 1:52:29 PM >>>

Request that you be on site Thursday morning, February 26th, 2004.

TEI is looking to start installing ABT Burners on Tuesday, March 2.

TEI will be working 24 hours a day 7 days a week, two 12 hour shifts 6:30 AM to 6:30 PM, beginning Friday night, February 27th.

Insurance: I checked with Jan Finlinson our risk manager and was advised that ABT is good on their insurance until the middle of April.

Note: You may want to look at extending this coverage.

Drug Policy: Because you are a Service Representative by yourself and not using tools IPSC is willing to wave on ABT having a drug policy.

Safety Orientation: When you arrive on Thursday morning, February 26th you will be taken to our Safety Department. You will be given IPSC's General Safety Review, confined space class and tagging class. Respirator training will be required if you will be wearing a respirator mask.

You will need to be signed on several clearance once Unit 2 is down. TEI be holding the group sheets for these clearances.

**IP7\_028078**

From: Howard Hamilton  
To: Hugh Loukinas  
Date: 2/4/2004 9:05:21 AM  
Subject: Fwd: RE: RE: ABT burner pitot photos - AMC WO NO 50633

For Isely's Information

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/4/2004 8:38:38 AM >>>

Jerry,

The tube joints are joined by silver brazing since the soldering process has too low of a temperature rating for our purpose. Andy Chew has it backwards in his response to you. Silver soldering is rated for a working temperature in the 400 to 500°F range. Silver brazing is typically rated upwards of 1100°F working temperature range.

Concerning the appearance of the brazed joints, PCW did not clean all the joints in which case you see some of the flux material used in the brazing process. PCW has assured us that the joints are good and will not leak.

Let me know if you have other questions.

Regards,

Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Tuesday, February 03, 2004 8:17 PM

To: Howard Hamilton; James Nelson; Phil Hailes

Cc: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Subject: Fwd: RE: ABT burner pitot photos - AMC WO NO 50633

FYI,

Here's Air Monitor's response to the photos of the IBAM manifold welding.

Hopefully, they did use silver solder, not brazing.

Sal, please advise.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/3/2004 4:34:23 PM >>>

Jerry,

Air Monitor agreed to ABT's suggestion of using a sealing method other than

Heliarc welding. Originally they mentioned brazing but we insisted on silver solder because the temperature rating of the silver solder joint is

much higher than that of brazing. You should ask ABT about this but it appears they did not clean the solder joints. They may be good joints and

**IP7\_028079**



just not look very pretty. You want to make sure they are pressure tested before going into service. When we modified the probes we only added additional total pressure sensor holes to the production manifolds. Additional static pressure sensor holes were determined to be not necessary as they did not improve the performance accuracy of the device. We will be providing an as built drawing which will include the pressure sensor details. Again, I am expecting to have the final burner test report anytime now and I will forward to you then.

Regards,

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
Tel.: 707-521-1709  
Fax: 707-526-2825  
Email: [achew@airmonitor.com](mailto:achew@airmonitor.com)

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Tuesday, February 03, 2004 2:31 PM  
To: Andy Chew; Matt Maragos  
Cc: [khpquip@earthlink.net](mailto:khpquip@earthlink.net)  
Subject: Fwd: ABT burner pitot photos

I'm sending this again, since our email was down yesterday.  
We do know that

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Jerry Finlinson 2/2/2004 2:14:00 PM >>>

FYI,

We have received our first burner from ABT.  
The Air Monitor pitot manifolds look nice, except for the welds.  
The T's are stainless, it seems preferable to have a nice weld rather than the brazing.  
I'm not sure it's what you had in mind. Take a look at the enclosed photos.

I'd like to know how you modified the pitots inside. I can see the additional holes you drilled in front of the high pressure tube, but I can't see any additional holes on the side of the other tube. How many

**IP7\_028080**

holes is it supposed to have?

Are they drilled in the backside? Please provide us a drawing of the as built tubes in case we ever need to order another

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

From: Howard Hamilton  
To: Hugh Loukmas  
Date: 2/23/2004 12:12:45 PM  
Subject: Fwd: Re: Regarding insertion depth of ABB Scanners?

Give to Isely

>>> Jerry Finlinson 2/23/2004 11:17:31 AM >>>

FYI,

Bill Clark of ABB says that even with our 9 degree lenses on the scanner tubes he expects a 10 to 13 inch recess of the scanner lens behind the turning vanes to be about right. So I'll get a packing gland from the warehouse, install it and see where it fits.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/23/2004 10:57:22 AM >>>

Jerry,

Yes, 9 Degree is what you have the text in the previous note is still correct for the application. A 10" to 13" recess behind the vanes would not impact the viewing area for the 9 degree lens.

Bill

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/23/2004 12:42 PM

02/23/2004 12:42 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: William M. Clark/USPOA/ABB@ABB\_US01  
cc:  
Subject: Re: Regarding insertion depth of ABB Scanners?

Bill,

IP7\_028082

I was under the impression from Mike Tolar, that we'd probably have 9 degree lenses on our scanners. Are you sure that we have 3 degree ones?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/23/2004 9:07:46 AM >>>

Jerry,

I have discussed the location and depth with both the Product Manager Jim Niziolek and the Design Engineer Paul Chase. Both concur that the scanner recessed approximately 10" behind the closed damper vanes would be adequate to view the flame. Since we are utilizing a 3 degree viewing lens, the viewing spot size changes very slightly in this area.

Assumptions are that the final dimension will be between 10" to 13" behind the closed damper vane with the packing gland installed and that the center point through the vane opening will be unobstructed.

We do not have a drawing which depicts a burner depth. We have made our recommendations concerning scanner location. The final burner / scanner location drawing should be in the ABT scope.

Regards,

William M. Clark  
ABB Inc.  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

**IP7\_028083**

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
04:16 PM

02/20/2004 04:16 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: William M. Clark/USPOA/ABB@ABB\_US01

"Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "Jim Knapp"  
<[JIM-KNAPP@ipsc.com](mailto:JIM-KNAPP@ipsc.com)>,  
"James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>, "Phil Hailes" <[Phil-H@ipsc.com](mailto:Phil-H@ipsc.com)>,  
Harry  
Dohalick/USINY/ABB@ABB\_US01, James M. Clark/USIMS/ABB@ABB\_US01  
Subject: Regarding insertion depth of ABB Scanners?

William,  
We have questions about the flame scanner guide pipe insertion  
depth. Presumably you designed the scanner tip to be in a certain  
location. Can you send us a drawing showing what that insertion  
depth  
is? Right now when the dampers are closed the scanner tip is about 10  
inches behind the damper. See attached photo.

Also we haven't yet received the packing glands. Jim have you shipped  
those already.  
Are they in with the scanner guide pipes?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 10:38:58 AM >>>

Jerry,

We see many methods, the preference would be a flexible 2" hose for

**IP7\_028084**

serviceability  
and to allow for boiler expansion.

I have enclosed a drawing to show a hose arrangement we have supplied historically

Regards,

William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01,  
William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT  
burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to  
your scanner cooling port.  
Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer

**IP7\_028085**

Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 435-864-6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>

Attached photos explain request for clarification concerning how ABB will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing 2" flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this note  
on February 20 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Existing Scanner.jpg" has been removed from this  
note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)  
(See attached file: B949738-Model.pdf)

**IP7\_028086**

From: Howard Hamilton  
To: ssteede@terservices.com  
Date: 2/20/2004 1:44:40 PM  
Subject: Fwd: Re: Response from ABB Regarding Connecting Cooling Air Hose to ABB Scanners

Based on the response provided below proceed with using the existing 1 1/2" flex hose using a 2" nipple and 2"x1 1/2" reducer to connect the ABB Scanned to the existing 1-1/2" flex hose.

Note: Jerry advised that the packing connection to seal the gap between the scanner and the 3" pipe connection on the front plate of the ABT burner is not on site. ABB is making arrangements to have the packing connection shipped out next week.

>>> Jerry Finlinson 2/20/2004 1:33:21 PM >>>  
Here's Bill Clark's latest response.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 12:38:16 PM >>>

Jerry,

The 6" above furnace pressure is the standard. Your Hoffman blowers sound as if they would be adequate at 13.5". Our scanners are good up to 900 degrees F on the hot end. The air helps keep the electronics head temperate and creates a positive purge through the lens assembly to keep it clean. Restricting the input to 1.5" pipe would not cause a problem.

Bill

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/20/2004 01:57 PM

02/20/2004 01:57 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

IP7\_028087



To: William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "Jim Knapp"  
<[JIM-KNAPP@ipsc.com](mailto:JIM-KNAPP@ipsc.com)>,  
"James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>  
Subject: Re: Response from ABB Regarding Connecting  
Cooling Air Hose to ABB  
Scanners

William,  
We currently have Baily Flame On scanners with a 1.5 inch cooling  
air line,  
the air is coming from a Hoffman Flame Scanner Blower and 6" header.  
We'd like to adapt the 1.5 inch  
line to your 2" input connection. Do you think that would be  
sufficient.  
Do these new scanners take about the same cooling air as the Bailey  
Flame On system?  
We'd rather not repipe our system unless absolutely necessary.

I'm not aware of any CFM measurements, should we try and get some?

I noticed in the manual that you recommend 6" positive pressure and 30  
cfm at 120F.

Our Hoffman blowers create pressure from 0-27 inches water.  
There is an alarm if the pressure drops below 13 inches and  
auto starts the backup blower if the pressure drops below 12.5 inches  
water.

Since our furnace runs at -.5 inches, we have a pressure drop of at  
least 13.5 inches probably much greater.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 10:38:58 AM >>>

Jerry,

We see many methods, the preference would be a flexible 2" hose for  
serviceability  
and to allow for boiler expansion.

IP7\_028088

I have enclosed a drawing to show a hose arrangement we have supplied historically.

Regards,

William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01,  
William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT  
burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to  
your scanner cooling port.  
Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624

**IP7\_028089**

435.864.6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

^^ Howard Hamilton 2/20/2004 8:12:44 AM ^^

Attached photos explain request for clarification concerning how ABB will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing 2" flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this note  
on February 20 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Existing Scanner.jpg" has been removed from this  
note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)  
(See attached file: B949738-Model.pdf)

(See attached file: C.htm)

**CC:** James Nelson; Jerry Finlinson; Phil Hailes

**IP7\_028090**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/10/2004 12:47:36 PM  
**Subject:** Fwd: RE: Rolled Hoop Replacement

Give to Isely

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/10/2004 12:14:45 PM >>>  
Howard,

We are supplying L2"x3"x1/4" rolled angles so you will be gaining 1/4" of adjustment. You won't need the new angles until you are installing the burners however you can cut the tacks on the rolled hoop Item 10 in the meantime and discard it. The new rolled angles will be shipping with the last truck load (maybe some partials earlier).

We are revising the installation notes on the field assembly drawing to account for this change. Attached is a WORD file with the revised notes as they will appear on the drawing.

Sal

-----Original Message-----

**From:** Howard Hamilton [<mailto:howard-h@ipsc.com>]  
**Sent:** Tuesday, February 10, 2004 10:50 AM  
**To:** [sal@advancedburner.com](mailto:sal@advancedburner.com)  
**Cc:** James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Subject:** Rolled Hoop Replacement

ABT is proposing to replace the rolled hoop item 10 on ABT drawing 03008-100-A02-D2 with a rolled L2"x2"x1/4. The existing hoop is 2 3/4" wide 1/4" rolled plate. This would mean that we will be losing 3/4" of adjustment in the horizontal direction. Would it not be better to roll

.

Please advise.

IP7\_028091

**From:** Howard Hamilton  
**To:** Hugh Loukmas  
**Date:** 2/20/2004 2:31:08 PM  
**Subject:** Fwd: RE: Tack welding of ABI Burner Throats

Give to Isely

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/19/2004 8:10:37 AM >>>  
Howard,

The stitch weld on the inside is all that we originally required of our foundry that assembled the throat castings. The first assemblies completed had more welding than we required. We advised the foundry of this and they reduced the welding to our original requirement by the last assemblies. Either way, the welding is acceptable.  
Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Wednesday, February 18, 2004 12:02 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); James Nelson; Phil Hailes;  
[ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: Tack welding of ABT Burner Throats

Please advise concerning the following.

The attached photos show that CCW 12, CCW 17 and CCW 09 were received with only a tack weld on the outer burner throat longitudinal seams.

This is the first burners to have been fabricated this way.

The burners started out with a full penetration weld ground smooth inside and out, then this evolved into a stitch weld inside and out and now we have a stitch weld inside and a tack weld outside.

**IP7\_028092**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/10/2004 8:51:55 AM  
**Subject:** Fwd: Rolled Hoop Replacement

Give to Isely

>>> Howard Hamilton 2/10/2004 8:50:01 AM >>>

ABT is proposing to replace the rolled hoop item 10 on ABT drawing 03008-100-A02-D2 with a rolled L2"x2"x1/4. The existing hoop is 2 3/4" wide 1/4" rolled plate. This would mean that we will be losing 3/4" of adjustment in the horizontal direction. Would it not be better to roll an L2"x3"x1/4".

Please advise.

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/18/2004 10:26:50 AM  
**Subject:** Fwd: Shipping Status (02-18-04) Delay of 12th shipment

give to Isely

>>> Howard Hamilton 2/18/2004 10:25:45 AM >>>

1. Load 10 should arrive around 10:30 AM today. The trucker called from I 70 / I 15 intersection asking for direction around 8:30 AM.

2. Load 11 arrived yesterday.

3. Load 12 has had a major engine breakdown. Trucker Maxine Crackle called Pacer Truck Dispatching this morning and advised that she was in Pennsylvania and has blown a hole in her engine. Brad advises that Pacer is sending a truck over to Pennsylvania to pick up the trailer and complete the journey to IPSC. Brad will keep me posted as the situation develops, but presently he figures that the 12th and final load of burners will not arrive until Tuesday, February 24th.

The 12th load is carrying the balance of replacement hoops (36) besides that final 4 burners.

**IP7\_028094**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/4/2004 1:25:33 PM  
**Subject:** Fwd: Shipping Update 02/04/04

Give to Isely.

>>> Howard Hamilton 2/4/2004 1:18:58 PM >>>

1. Fifth Load - As of 1300 the truck is in Illinois. Trucker Charles Barnett advises that he will most likely arrive at IPSC Saturday. He will call Friday Morning to confirm with TEI.

2. Sixth Load - Will be picked up this afternoon from Passaic County Welders. Pacer has an eta of Monday (02/09/04).

Note: The sixth load will be carrying the ACME rod replacement for the damper drives that were damaged during shipment.

3. Seventh Load - Passaic County Welders have advised Pacer to pick up the 7th load of burners on Thursday Morning. Pacer is looking to have a trucker there Thursday afternoon or Friday Morning.

Note: This will be the first load of CCW Burners.

4. Eighth Load - Passaic County Welders has advised Pacer to pick up the 8th load on Friday afternoon.

**IP7\_028095**



**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 1/27/2004 9:22:35 AM  
**Subject:** Fwd: Special Tasks and Clearances for Burners During Unit 2 Outage

Give to Isely for his information.

>>> Howard Hamilton 1/26/2004 9:18:05 AM >>>

For the past 3 weeks I have been talking with Boyd Cowley and Lloyd Leavitt concerning removal and replacement of 48 burners during the Unit 2 Outage. During our conversations I have been made aware that this work will require special tasks and clearances that are unusual to a typical unit outage.

**The following is a list of special considerations that have come up during our conversations:**

1. Fuel oil needs to be drained out of the burner fuel oil lines feeding the 48 burners.
2. Coal valves attached to the inlet of the burner elbows will be removed.
3. Plates are being installed over the coal pipe exposed when the coal valves are removed. This is to protect IPSC Maintenance personnel working on the pulverizers and to keep debris out of the coal pipes.
4. Because the coal valves are being removed the tagging boundary is being changed from the coal valves to the cover plates called out in item 3.
5. The burner atomizing air lines and the burner purge airlines are being removed to all 48 burners.
6. The control air tubing is being removed from all 48 burner lighters.
7. Coal elbow flange bolts are to be loosened and lagging immediately around the elbows is to be removed as soon as the fire in the boiler is out.
8. Electrical wire and conduits to the burner thermocouples, burner oil lighters, burner flame scanners, and burner temperature switches will need to be removed.
9. All of the systems that will allow the above need to be clearanced by 700 Saturday, February 28, 2004.

Boyd Cowley advises that Ken Lebbon's Crew 1 will be on duty from 1900 Friday, February 27th to 700 Saturday, February 28th.

Joe Dowell's Crew #4 will be on duty from 700 to 1900 Saturday, February 28th. Any loose ends from Saturday nights shift will need to be completed on Saturdays' day shift.

TEI will have a small crew of about 6 to 10 people out from 1830 Friday, February 27th to 630 Saturday, February 28th.

**I talked with Jon Finlinson on Friday, January 23. The following is what we discussed and an outline of what needs to happen during Saturday's night shift on February 28th.**

**IP7\_028096**

I.) Lloyd Leavitt came up with the following three procedures for draining the fuel oil from the burner lines:

Procedure 1: Calls for using the fuel oil purge air system to push the fuel oil in the fuel oil lines back to the fuel oil tanks by forcing open valve 2FOBHOI-ABV-22 and pushing the fuel oil back to the fuel oil tanks through the fuel oil supply recirculation line.

Procedure 2: Same as Procedure 1 except it is assumed that an I&C Technician is not available to force open valve 2FOBHOI-ABV-22. To deal with this problem a 1" diameter hose with Chicago fittings will be used to connect drain valves before and after 2FOBHOI-ABV-22 so that it can be by passed.

The draw back is the restriction of a 1" hose by-pass that will take a considerably longer time to drain the burner line fuel oil than procedure 1.

Procedure 3: Is that Same as procedure 1 except that the unmarked drain just after 2FOBHOI-ABV-22 will be used to connect a 1" diameter rubber hose and drain the fuel oil directly into a 55 gallon drum. This procedure will need to be implemented if the fuel oil will not drain back to the fuel oil tanks by way of the fuel oil supply recirculation line.

The draw back to this procedure is that it is even more time consuming than procedure 2 because draining fuel oil into a 55 gallon drum will require a considerable expenditure of effort as compared to simply letting gravity do the work.

Note: Lloyd feels that the best way to drain the fuel oil lines is to start at the top of the 8th floor and work in sequence down to the bottom or 5th floor. Lloyd states that this precaution will keep oil from the upper burners from draining into the lower burners.

Note: Lloyd also states that it is important to have valve 2FOBHOI-ABV-22 open prior to applying purge air. This will allow the long fuel oil drop legs from the burners to the fuel oil supply pumps to drain back to the fuel oil supply tanks through the fuel oil supply recirculation line. Drainage of the fuel oil out of the drop legs will make room for the fuel oil that is left at each of the burner elevations.

Note: Attached to this email find procedures 1, 2 and 3 that Lloyd wrote and PD&I Drawings 2SGE-M2067 and 2FOB-M2049 that Lloyd marked for draining of the burner fuel oil lines.

II.) TEI needs to be able to start disassembly of the burner fuel oil lines, burner fuel oil purge airlines and burner fuel oil atomizing airlines feeding the 48 burners by 700 on Saturday morning, February 28th. Removing the these lines will allow removal and replacement of the existing burners. Because of the amount of piping that needs to be disassembled TEI will need to begin disassembly early in the outage.

Jon Finlinson advised that he will have Operations draining the fuel oil lines as discussed above as soon as the fire is out of the boiler. Jon estimates that draining of the fuel lines should start sometime just past midnight on February 28th. On also states that the igniter fuel oil system 2SGE will be tagged by 700 Saturday, February 28th.

TEI cannot start disassembly of the burner fuel oil lines, burner fuel oil purge airlines and burner fuel oil atomizing airlines until the following has occurred.

A.) Operations has drained fuel oil from the burner fuel oil lines at each of the burner elevations.

- B ) Operations has the igniter fuel oil system (2SGE) tagged and the clearance is available.
- C.) Howard has signed off onto the clearance and obtained a group tag out sheet and work card.
- D ) TEI has signed onto the group tag out sheet.

**III.)** TEI needs to start pulling burner elbows and coal valves on all 48 burners at 700 Saturday, February 28. This is critical to the installation of boiler scaffolding and Maintenance's access to the pulverizers.

Jon Finlinson advises that Operations is shooting to have the fireside clearance available by 700, Saturday February 28th.

TEI cannot start pulling burner elbows and coal valves until the following has occurred.

- A.) Operation has hung the fireside clearance and the clearance is available.
- B.) Howard has signed onto the clearance and obtained a group tag out sheet and work card.
- C.) TEI has signed onto the group tag out sheet.

Note: TEI will place a square steel plate over the top of the coal piping that was flanged to the inlet of the coal valve upon pulling a coal valve.

Note: Per Jon Finlinson the plate noted above will become the boundary for the pulverizers. TEI will place a hole in the plate so that Operations can tag the plate with a DNO.

Note: TEI will need to notify Operations prior to reinstalling the coal valves so that the DNO tag on the plate can be removed. As soon as the valve is installed and the coal valve is closed TEI is to contact Operations so that a DNO can be placed on the coal valve.

Note: Per my conversation with Jon Finlinson on 01/23/04 neither TEI nor I need to be signed onto the pulverizer clearances. The boundary DNO described above is for the protection of Maintenance. The fireside clearance has the primary air fans which TEI and I will be signed onto. Without the primary air fans there can't be any coal supplied to the burners.

Note: Maintenance can be signed onto any of the eight pulverizer clearances. Thus, to move the boundary from the plate to the coal stop valve will required that all those signed onto a given pulverizer clearance will need to sign off the clearance. As TEI has 48 burners to reinstall and there are 8 pulverizer clearances this has the potential to be a real bottleneck. Request that Operations look into this problem and see if something can be done to relieve this bottleneck.

**IV.)** TEI needs to be able to loosen the bolts in the burner elbow flanges and remove lagging from immediately around the burner elbow. This will give TEI a needed jump on removing the elbows when the fire side clearance becomes available at 700 on 2/28/04.

TEI cannot loosen bolts on or remove lagging from around the coal elbows until the following has occurred.

- A.) Operations has written an OK-TO clearance to loosen bolts on the coal elbows and remove lagging from around the immediate burner elbow.
- B.) Howard has signed onto the OK-TO Clearance and been issued a work card along with a

group tag out sheet.

C.) TEI has signed onto the group tag out sheet.

Note: the CO may or may not require a group tag out sheet. Since no tags will need to be hung a work card maybe all that is required.

Jon Finlinson advises this work can begin as soon as the fire is out of the boiler.

V.) TEI needs to be able to begin removing copper tubing supplying the control air to the fuel oil lighters at 700 on February 28th. Until this tubing is removed the burner lighters cannot be removed, the burners pulled, the lagging removed or the tubing trays moved.

TEI cannot begin taking the control air tubing apart until the following has happened.

A.) Operations has hung the control air system and the clearance is available.

B.) Howard has signed onto the clearance and obtained a group tag out sheet and work card.

C.) TEI has signed onto the group tag out sheet.

Jon Finlinson advises that Operations is shooting to have the control air clearance available by 700, Saturday February 28th to accomplish this work.

Note: Lloyd Leavitt states that the control air feeding the burner ingiters can be found on P&ID drawing 2CAB-M2016A.

VI. The seal air piping that supplies air to the burner flame scanners will be tagged out with the fireside clearance. Seal air is provided by the primary air fans (reference P&ID 2SGA-20636-7).

TEI will need to remove the flex hose for this piping starting a 700 on 2/28/04.

VII.) Jerry Finlinson is to make manpower arrangements to have the electrical wiring and conduits removed going to the burners. Jerry will also work with Operations concerning the clearances he will need to perform this work.

TEI will need electrical wiring and conduits to the burner thermocouples, burner oil lighters, burner flame scanners and burner temperature switches removed. This will allow TEI to remove the burners and the bulk of the lagging around the burners and hand railing in front of the burners. TEI needs to have the wiring and conduit removed by 700 on Saturday, February 28th.

TEI cannot begin taking the handrail down and removing burners until the following has happened.

A.) Operation's has the systems associated with the above electrical work tagged and clearances available.

B.) Jerry Finlinson has signed onto the clearances required for this work.

C.) Jerry Finlinson has removed electrical wiring and conduit to items noted above.

D.) Howard has signed onto the required clearances and obtained a group tag out sheets and work cards.

E TEI has signed onto the required group tag out sheets

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 1/27/2004 9:21:04 AM  
**Subject:** Fwd: Status of Burner Shipments - 01/27

Give to Isely for his information.

>>> Howard Hamilton 1/27/2004 9:06:20 AM >>>

The first shipment of 4 burners is in Salina Kansas as of 7:00 AM this morning. Salina Kansas is 800 miles from Delta. Trucker figures he will be onsite around noon tomorrow (01/28/04).

The second shipment of 4 burners is still at Passaic County Welders waiting for Pacer to dispatch a truck to pick them up. Pacer's advises that the weather is really bad in their area and they are having a tough time getting a trucker to Passaic County Welders. Brad at Pacer advised that Maryland has declared a state of emergency which means no trucks are allowed to cross the border into the state until the roads are plowed. Pacer has truckers that do not need to go through Maryland to get to New Jersey, but Brad mentioned it to give an idea of the weather problems they are facing.

Note: Passaic, New Jersey to Delta is 2000 miles.

The third shipment of burners is ready to go. Contacted Sal Farrar at ABT and was advised that Passaic County Welders has eight completed burners on their shop floor waiting for Pacer to pick them up.

**IP7\_028101**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/19/2004 7:29:13 AM  
**Subject:** Fwd: U2 Flame Scanner status feb18 2004

This afternoon Jerry and ABB representative will bring over a tube to fit it up in one of the burners. Jerry tells me he has talked to you about this.

Will you want all 48 tubes delivered now or will you want to wait until the outage?

Would there be an advantage to install the tube before the outage.

>>> Jerry Finlinson 2/18/2004 6:54:19 PM >>>

Bill,

Just as I was about to go, Jon C tells me that you had some questions.  
So here are the answers.

I got a call from Harry Duhalik today asking me to try placing a scanner in position on the burner to make sure they fit correctly. I tried to track down the shipment. The FedEx Freight website said they were still in SLC, but later I got an email that we received them on Monday. So tomorrow I'll go find them and do the fit test.

Mike Tolar is doing the training class. He is going to be coming back 25 March to do the commissioning and startup.

He's giving us lots of tips and things to check out before he arrives. I'm going to run my drawings by him tomorrow on the wiring details. He thinks it will take 5-7 days after startup to get it all tuned and set up, so he'll stay as long as it takes.

He's also reviewing how to install and insert them, so that will be good.

We'll review with TEI how to install the guide pipes, as soon as I find them tomorrow.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**CC:** Hugh Loukinas

**IP7\_028102**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/10/2004 1:29:29 PM  
**Subject:** Fwd: Vacuum Piping for Unit 2 Outage

Give to Isely

>>> Howard Hamilton 2/10/2004 1:18:34 PM >>>

Jeff Schena, Bret Wardle, Jim Roberts, Tiny and myself meet up in the boiler today at 10:30 am to go over the vacuum truck piping requirements for Cleaning the air heaters and boiler windboxes.

The basics of this meeting are as follows:

1. About 500 ft of hard piping will be needed for the windboxes front and rear this is on top of the 300 ft of hard piping that Onyx is bringing with them when they bring the vacuum truck.
2. Maintenance will review their requirements and provide what hard pipe they can for the windboxes.
3. Jeff will order the balance of the hard piping and all of the fittings required to pipe the air heater and windboxes.
4. Jim Roberts and Tiny from TEI gave Schena a list of the fittings they will need and Schena will see that they're brought when Onyx mobilizes.
5. Onyx will be down on Monday, February 23 bringing the vacuum truck, pipe and fittings to meet the requirements of the meeting held today.
6. Maintenance will bring over the hard piping they can spare on Monday, February 23.
7. TEI will place the vacuum piping in preparation for the Unit 2 outage which begins on Saturday, February 28.
8. Schena is to order enough flex hose to take care of the 700 ft that was requested today plus extra to take care of collapse and wear out.



**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/24/2004 12:53:48 PM  
**Subject:** Fwd: Vacuum Piping to Unit 2 Boiler Penthouse

Give to Isely:

>>> Howard Hamilton 2/24/2004 12:52:46 PM >>>

Gary Judkins has requested that the vacuum piping TEI is using to vacuum the windboxes be left in position once TEI has completed vacuuming the windboxes.

Maintenance wants to tie into the windbox vacuum piping and extend it up to the penthouse on the 17th floor.

Maintenance is shooting to vacuum out the boiler penthouse on Wednesday (3/3/04) and Thursday (3/4/04).

I talked to Darrell Steed today and advised him of the above.

Darrell advises that Maintenance is free to tie into the windbox vacuum piping as soon as TEI is finished cleaning out the windboxes. This work should be completed by Monday, March 1.

Once Maintenance has completed vacuuming out the boiler penthouse they will see that the vacuum piping is disassembled.

It should be noted that the U2 access ways are going to be very busy both east and west. Maintenance will need to coordinate with TEI to make any lifts. Darrell feels that any material or equipment Maintenance needs to be lifted can be addressed quickly as long as TEI has a heads up.

I advised Gary that There will be two vacuum trucks from Onyx on site at the start of the outage. One is being rented by IPSC for 30 days and the other for 5 days. Once the windboxes are vacuumed the 5day rental will be taken off rent. Once the air heaters are vacuumed the 30 day rental is to be released to Maintenance. The release of both trucks should happen by Monday, March 1.

## REMOVAL AND INSTALLATION NOTES:

THE FOLLOWING INSTRUCTIONS ARE SUGGESTIONS. THE SEQUENCE MAY BE MODIFIED TO ACCOMMODATE WORK FLOW, EQUIPMENT AVAILABLE, AND SKILL LEVELS OF THE WORKMEN.

UNLESS NOTED OTHERWISE ALL WELDS ARE CARBON STEEL TO CARBON STEEL.

1. REMOVE ELBOW
2. INSTALL VFD ITEM 3 (VERTICAL FUEL DISTRIBUTOR) PER DRAWING 03008-500-A03-0 IN EXISTING ELBOW
3. DISCONNECT SEAL AIR PIPING, OIL, AIR LINES AND ALL ELECTRICAL LEADS
4. REMOVE EXISTING SCANNERS, DISCARD.
5. REMOVE EXISTING OIL IGNITER AND SET ASIDE FOR REUSE
6. REMOVE INSULATION AND LAGGING AROUND EXISTING BURNER FRONT PLATE
7. REMOVE EXISTING BURNER AND DISCARD
8. REFERENCE B&W DRAWING 294359E. REMOVE ITEM e AND GRIND WELDS FLUSH TO THE EXISTING CASING WELD RING.
9. BREAK TACK WELDS OF SUPPORT RING, ITEM 10 AND SEAL RING ITEM 11
10. DISCARD ITEM 10 (ROLLED RING) AND REPLACE WITH NEW ANGLE RING SHIPPED SEPERATLY.
11. INSTALL NEW BURNER. SEE DRAWING 03008-100-A01-FW AND 03008-100-A01-RW FOR BURNER LOCATION AND SPIN. ITEM 11 SHOULD BE KEPT IN POSITION ON THE TIP.
12. CENTER BURNER IN FURNACE WALL OPENING AND LEVEL AND PLUMB BURNER. LOCATE TIP PER SIDE VIEW.
13. INSTALL BURNER CROSSOVER SUPPORT ITEM 9 (03008-100-A03-D07) AND SUPPORT END GUIDE ITEM 15 (03008-100-A03-D08), CENTER ITEM 15 ON ITEM 9 TUBING, WELD AS SHOWN IN SECTION D-D. SHIM TO FIT TO EXISTING SUPPORT RAILS. COMPLETE WELDING PER SECTION D-D.
14. LOCATE SUPPORT RING, ITEM 10, AGAINST WINDBOX WALL. TACK WELD TO WINDBOX AND BURNER FRONT PLATE
15. CENTER ITEM 11 ON THE TIP, AND TACK IN PLACE TO THE EXISTING CASING WELD RING
15. INSTALL COAL ELBOW & HORIZONTAL FUEL DISTRIBUTOR ASSEMBLY PER DETAIL B.
16. THE BURNER CAN BE MOVED UP TO 1/4" IN ANY DIRECTION TO FIT UP WITH THE EXISTING COAL PIPE ATTACHMENT.
17. FINISH WELDING FRONT PLATE AND SUPPORT RING IN PLACE SEE DETAIL "C".
18. FINISH WELDING BURNER FRONT AND SUPPORT RING PER DETAIL C
19. INSTALL FLAME SCANNER PER ABB DRAWING:  
902-2491-AA  
STNRD-B232666-107  
STNRD-D232665-025

STNRD-D232677-002

STNRD-00-D623232-000-001

20. INSTALL OIL IGNITER PER THIS DRAWING AND B&W DRAWING 294359E
21. INSTALL T/C LEADS PER MANUFACTURERS INSTRUCTIONS.
22. MAKE ALL OIL AND AIR CONNECTIONS.
23. MAKE ALL ELECTRICAL CONNECTIONS FOR THERMOCOUPLES, AND MAIN FLAME SCANNER.
24. INSULATE AND LAG BURNER FRONT
25. STROKE ALL OPERATORS TO MAKE SURE THAT THEY FULLY OPEN AND CLOSE WITH NO BINDING.
26. AFTER DRAFT FANS HAVE BEEN STARTED CAREFULLY TIGHTEN ALL PACKING GLANDS TO STOP ANY LEAKS AROUND SHAFTS (DO NOT OVER TIGHTEN). RECHECK ALL OPERATORS FOR MOVEMENT.

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 2/18/2004 9:38:56 AM  
**Subject:** Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com; Tarkel Larson

**IP7\_028107**

**From:** Howard Hamilton  
**To:** Gary Goold  
**Date:** 4/21/2004 11:45:30 AM  
**Subject:** Staff Walkdown of Unit 2 West Side - Item 21651 - Pallet of Refractory

Attached photo shows a pallet located on the West Side of the Unit 2 Turbine Building. The pallet contains 5 buckets of Fine Load and two bags of de-icer. My best guess is that TEI had this material left over from the outage.

Request that Warehouse pick up the pallet and restock the fine load and de-icer.

Fine Load: SIN #50084, SIR #275486, WO #03-96033-02

De-Icer: SIN #5095, SIR #270305, WO #03-96033-02

**CC:** James Nelson; Phil Hailes

**From:** Howard Hamilton  
**To:** Van Stewart  
**Date:** 4/21/2004 11:06:21 AM  
**Subject:** Staff Walkdown of Unit 2 West Side - Item 21651

Attached photo shows a pile of sand and salt on the West Side of Unit 2 up against the north side of the turbine building.

This came up in a staff walkdown. Could you have the pile removed asap.

Thanks.

**CC:** James Nelson; Phil Hailes

**From:** Howard Hamilton  
**To:** Mike Alley  
**Date:** 4/21/2004 11:15:38 AM  
**Subject:** Staff Walkdown of Unit 2 West Side - Item 21651 - Frash Drums

Attached photo shows trash drums stacked up along the north side of Unit 2 Turbine Building. TEI obtained the drums from you for the outage. What do you want done with them.

Gary Gould: I imagine Mike will want to have the drums taken back to the USB. I have left a message on Mike's Voice Mail and await a response.  
I will call you when as soon as Mike lets me know where he want the drums.

**CC:** Gary Goold; James Nelson; Phil Hailes

**From:** Howard Hamilton  
**To:** Gary Gould  
**Date:** 4/21/2004 11:58:51 AM  
**Subject:** Fwd: Staff Walkdown of Unit 2 West Side - Item 21651 - Trash Drums

Mike Alley called me a 11:45 AM and advised that he would like the trash drums brought back to the USB. Place them on the north side of the building over next to the empty oil drums next to the oil sump.

>>> Howard Hamilton 4/21/2004 11:15:38 AM >>>

Attached photo shows trash drums stacked up along the north side of Unit 2 Turbine Building. TEI obtained the drums from you for the outage. What do you want done with them.

Gary Gould: I imagine Mike will want to have the drums taken back to the USB. I have left a message on Mike's Voice Mail and await a response.  
I will call you when as soon as Mike lets me know where he want the drums.



**From:** Howard Hamilton  
**To:** James Nelson  
**Date:** 4/21/2004 10:22:37 AM  
**Subject:** Staff Walkdown of West Side of Unit 2

Attached are photos of items laying around on the West Side of Unit 2 that are eluded to in Staff walk down item 21651

I marked the photos to indicate who was responsible for the debris.

I will send email to Van Stewart and Gary Gould addressing items that are my responsibility.

Bret, Phil: Photos also call out items that belong to Safeway and OFA.

**CC:** Bret Kent; Phil Hailes

**From:** CHRISTINA SPENCER  
**To:** HOWARD HAMILTON  
**Date:** 5/27/2004 1:54:56 PM  
**Subject:** Work order 03-96033-39 Has been Closed

REMOVE TEMPORARY LADDERS LOCATED ON THE REAR OF UNIT 2 BOILER AND  
REPLACE FLOOR GRATING.

Work assigned to crew 57

Total Hours 17.00

Total Material Cost 14.63

**From:** Howard Hamilton  
**To:** Ron Taylor  
**Date:** 4/1/2004 7:04:31 AM  
**Subject:** Ceramic Bricks

St. Gobain out England is where the ceramic tiles were manufactured.

ABT had the vendor who made the VFD and HFD order extra brick and ship is out to us.

ABT has no address or phone number but they believe they can be found on the internet.

**From:** Howard Hamilton  
**To:** James Nelson  
**Date:** 4/1/2004 6:56:19 AM  
**Subject:** Coal Leak in E4 Restrictor

Coal leak was discovered Restrictor E4 at 4:15 PM yesterday evening.

Worked with TEI until 5:30 PM to get the leaking under control.

The Restrictor had a gasket leaking along its entire right hand side.

Tightening all of the bolts additionally helped, but grease has to be applied to stop the leaking.

I will take a look at E4 in the morning and take a look at all of the Restrictor today.

The gasket on E4 needs to be replaced when the unit comes down. I will talk to Alan Dewsnup about getting this done if TEI cannot get to it during the outage scheduled for this week end.

**CC:** Alan Dewsnup; Ron Taylor; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

**IP7\_028115**

**From:** Howard Hamilton  
**To:** Chad Rappleye  
**Date:** 4/19/2004 3:04:54 PM  
**Subject:** Moving of monies from Burner Work Order to Maintenance's Budget.

The following items were charged to Work Order 03-96033-00 and subs, when they should have been charged to Maintenance. Please move these item out of the work order and over to Maintenance. The items below represent a total of **\$101,581**.

**1. \$40,198.58** - The cost of 48 ceramic valve seats as called out in 03-96033-02 - reference SIR# 274360 and 275956 - The valve seats have a SIN #13099 and the description: "Seat, swing valve, Cera-Vam, 21-1/4" seat ID, Seat OD no larger than 26-1/2" Nor smaller than 26-1/4" for use in pulv. and burner isolation valves, B&W, P/N 2356758."

Reason: TEI replaced these seats as part of an extra to overhaul the coal valves. This work would normally be done by Maintenance. These seats would have been provided by Maintenance for any overhaul that would have been done to the coal valves either by Maintenance or a contractor.

**2. \$9,373.44** - The cost of 48 rubber seats as called out in 03-96033-02 - reference SIR #274360 - the rubber seats have a SIN #10685 and the description: " Gasket ring, 20-1/2" x 22-1/2" material rubber with 6-5/16" studs for use in swing valves located in classifier cone in MPS 89G pulverizer, B&W / 8804477."

Reason: TEI replaced this as part of an extra to overhaul the coal valves. This work would normally be done by Maintenance. These seats would have been provided by Maintenance for any overhaul that would have been done to the coal valves either by Maintenance or a contractor.

**3. \$1,800.00** - The cost of 12 swing valve plate assemblies as called out in 03-96033-02 reference SIR #274486 - The swing valve plate assemblies have a SIN #58875 and the description: "Plate assy. , 23" OD pulverizer outlet and burner inlet isolation swing valve plate. IPSC fabbed replacement or B&W part #3029789."

Reason: TEI replaced this as part of an extra to overhaul the coal valves. This work would normally be done by Maintenance. These seats would have been provided by Maintenance for any overhaul that would have been done to the coal valves either by Maintenance or a contractor.

**4. \$3,678.40** - The cost of 11 cans of Fine Load as called out in 03-96033-02 reference SIR #275486, 275509 - The Fine Load has a SIN #50084 and a description: "Compound Resin, Fine Load 300 Resin, 30# can. DEVCON P/N 11470."

Reason: TEI applied Fine Load to the damaged ceramic tiles found inside the coal elbows. Maintenance generally does this work but it was covered as an extra to TEI (Reference 03-96033-30) Maintenance would provide this material whether it was done by Maintenance or a contractor.

**5. \$27,942.72** - The cost of 3 burner lighter assemblies as called out in 03-96033-00 reference SIR #2745428 - The burner lighter assemblies have a SIN #11650 and a description: "Lighter 12'-7/8" x 10'-1-1/2", Dwg No. 269375 E, right hand assembly, MFG B&W, P/N 8005624."

Reason: The three lighters that were replaced were damaged by radiant heat generated by the boiler. TEI had to remove all 48 lighters from the old B&W burners during the outage. While cutting the lighters from the old burners several were noted to be heat damaged and they were replaced with new lighters. The lighters were so badly warped that the lighters has to be cut to be

replaced. Replacement of the lighters would have normally been done by Maintenance.

**6. \$4,010** - The cost of 11 cans of Fine Load as called out in 03-96033-30 reference SIR #276577  
- The Fine Load has a SIN #50084 and a description: "Compound Resin, Fine Load 300 Resin, 30# can. DEVCON P/N 11470."

Reason: TEI applied Fine Load to the damaged ceramic tiles found inside the coal elbows. Maintenance generally does this work but it was covered as an extra to TEI (Reference 03-96033-30) Maintenance would provide this material whether it was done by Maintenance or a contractor.

**7. \$3,555.60** - This is the cost of material and labor for WO #03-96033-29 with the following description: "Renew Burner / Pulverizer swing valve plate." This entire sub work order needs to be moved over to Maintenance.

Reason: The pulverizer swing valve plate is the same plate that is used in the coal valves. The coal valves were overhauled by TEI under 03-96033-27. Maintenance would generally do this work and supply the swing valves. Time spent by Maintenance to perform work on the swing valves so they could be reused would be done by Maintenance whether they did the work or it was done by another contractor.

**8. \$14,222.27** - This is the TEI work release charge and material costs for WO #03-96033-27 with the following description: "Cost tracker for TEI to provide time and materials to modify and repair existing valves at T&M." This entire sub work order needs to be moved over to Maintenance.

Reason: Overhaul of the coal valves would normally be done by Maintenance. This work was done by TEI as an extra. Thus, material and labor charges should go to Maintenance. Note that \$211.27 of the 14,222.27 are for materials the rest of the cost is to TEI as an extra.

**CC:** James Nelson; Mark Nelson

**From:** Howard Hamilton  
**To:** Phil Harles  
**Date:** 4/6/2004 5:12:32 PM  
**Subject:** TEI Cleanup Status as of 4/6/04 from the 8th floor down to the ground floor.

General:

1. Redi Insulation started work on placing lagging around the burner fronts today. This is their last major item to complete. Redi is looking to be done by this Friday 4/5/04. Brandon Steed of TEI will stay on site until Redi completes their work. There will be lagging on the burner front floors until Redi does a final clean up on Friday.
2. Safeway Scaffold plans to have all of the scaffolding out of Unit 2 by Friday. They need the elevators in Unit 2 to make this date.
3. TEI will have a 3 man crew available from 7:00 AM Thursday Morning until Unit 2 is on line at full load, which Operations estimates will be about 3:00 AM Friday Morning. This crew will be looking for coal leaks and boiler expansion problems.
4. TEI will be shipping out tools and equipment staged next to the Unit 2 turbine access tomorrow.
5. TEI will be shipping out wood and tool boxes staged on the west side of Unit 2 Turbine Building tomorrow.
6. TEI's Trailer will be shipped out on Thursday.
7. As soon as Operations completes the Unit 2 wash down TEI will sweep up the debris from the ground floor that pertains to insulation and lagging. The wash down should be completed Tuesday Night.

List of Cleanup Items that TEI will need to address:

1. The lighter stands and fuel pans need to be placed back in position on the front wall for floor elevations 5, 6, 7 and 8. They are to be placed back the way they were originally which is similar to Unit 1. The Rear wall lighter stand and fuel pans are back the way they were found.
2. 8th floor front wall East windbox access door. Clean up insulation in front of door.
3. 8th floor H208 remove 4x8 plywood, elbow stand, 4x4 lumber and scrape lagging.
4. 7th floor H202 remove plywood, wood framing and pallet.
5. 6th floor H202 - G202 remove plywood sheet Metal Misc wood pieces.
6. 6th floor East elevator remove scaffold knuckles and splice plate.
7. 6th floor H203 remove scrap lagging and scaffolding.
8. 5th floor H202 remove two wood planks.
9. 5th floor West access way remove scrape lagging.

**IP7\_028118**

10. 5th floor rear wall remove Safeway scaffold pieces
11. 5th floor N205 remove liquid oxygen tank, and acetylene tank, along with masonry saw
12. 5th floor I 208 remove scaffolding to Restrictor
13. 6th floor rear wall take power cart back to Toolroom.
14. 6th floor L203 remove scaffold planking, used insulation and lagging.
15. 8th floor rear wall N205 return power cart to tool room.
16. 4th floor M208 to M209 remove wood timbers.
17. 3rd floor West access way remove wood pallet.

**CC:** Dale Hurd; James Nelson; Jon Finlinson; Richard Schmit;  
ssteede@teiservices.com



**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 2/6/2004 4:26:49 PM  
**Subject:** Missing Turning Vane Pin

Pin and cotter pin were missing from CW 4 outer spin vane linkage, apparently lost during shipping or staging.

Please send out a couple of dozen extra pins and cotter pins as shown in the attached photos to take care of any other lost pins that may occur.

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** [sal@advancedburner.com](mailto:sal@advancedburner.com)  
**Date:** 2/11/2004 1:49:01 PM  
**Subject:** Fwd: RE: Missing Turning Vane Pin

Please advise when and how the pins are to be shipped?

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/9/2004 8:15:00 AM >>>  
Howard.  
The cotters should all have been bent on the end to prevent them from slipping out. Evidently some were missed. We will ship you a dozen extras.  
Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Friday, February 06, 2004 6:27 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: Missing Turning Vane Pin

Pin and cotter pin were missing from CW 4 outer spin vane linkage, apparently lost during shipping or staging.

Please send out a couple of dozen extra pins and cotter pins as shown in the attached photos to take care of any other lost pins that may occur.

**CC:** [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

**IP7\_028121**

**From:** Howard Hamilton  
**To:** Brad Thompson; Jon Christensen; Pam Bahr  
**Date:** 4/28/2004 4:53:35 PM  
**Subject:** New Hoist in DataTrak

I have assigned equipment numbers 1BSA-HOI-B6A and 2BSA-HOI-B6A in DataTrak for the two new hoist to be installed for the rear wall access way.

The Harrington 2 ton chain hoist are in Receiving.

Brad note that I assigned the hoist with serial number 3ASY8262-2322 to unit 1 and the hoist with serial number 3BSY1271-2636 to unit 2.

Jon - Information pertaining to the electrical and motor I leave for you to fill in.

Brad - Information on lubrication I leave for you to fill in. Contact me and I will see that this information is placed in DataTrak when you decide how you want to lubricate.

**From:** Howard Hamilton  
**To:** Nancy Bennett  
**Date:** 4/18/2005 12:40:58 PM  
**Subject:** Additional Manuals for Worthington Hoists

Please request that Worthington Hoist supply 13 operation and maintenance manuals with electrical schematics for the two, 2 ton chain hoists supplied for the rearwall access project which was part of IGS03-04 (Unit 2 Burner Replacement).

Worthington will probably want monies to cover the cost of the 13 manuals. Contact Jon Christensen as he has several places he can charge the manuals to.

Note that an owners manual was received with each of the two hoists, but these manuals did not have any electrical schematics for the hoist. The assembly and installation instructions for the chain container, the repair and warranty service information, The "Steel Chain Container SC134 Assembly and Installation" drawing 60579 and the "Warning Sheet" were sent Separately. Have Harrington bond all of these documents into a single manual prior to sending them to us.

See that the operations and maintenance manuals are delivered to Jon Christensen or Pam Bahr.

The hoists were purchased for WO# 03-96033-15 through PO# 04-38762. The hoists purchased are Harrington Hoist Model Number NER020S, the Serial Numbers for the two hoists are NERIA-3ASY8262-2322 and 3BSY1271-2636.

This project was done on a fast track so that IPSC could utilize the Ironworkers that TEI had on site for the Over Fired Air Project during the Unit 2 Spring Outage of 2004. All of the structural steel arrived on site during the outage and was installed by TEI before the outage was over. The hoists were purchased and arrived on site April 22, 2004 and have been in receiving ever since.

Maintenance has requested that they received an electrical package for this work before proceeding with the installation of the hoists. Jon Christensen is in the process of putting together a package for them and it was noted that we never asked for 13 operation and maintenance manuals required for distribution.

Jon: Attached photos are for your information concerning the placement of the access ways in Unit 1 and 2.

**CC:** Brad Thompson; Dean Wood; Jon Christensen; Pam Bahr

**IP7\_028123**

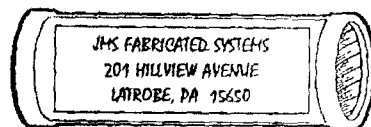
**From:** Roger Frazier  
**To:** Hamilton, Howard  
**Date:** 4/22/2004 3:12:12 PM  
**Subject:** Electric Chain Hoist

Two electric chain hoists have arrived, and are staged in receiving, between the boiler tubing.

P.O. 04 - 38762

W.O. 03-96033-15

**IP7\_028125**



PH: 724-537-6365 FAX: 724-537-7281  
E-MAIL: jims&jmsind.net

---

## PACKING LIST

JMS Job #24-011

Date: 03/02/04

---

SHIP TO: Intermountain Generating Station  
850 West Brush Wellman Road  
Delta, Utah 84624  
Attn: James Nelson  
Contract #04-45606  
Intermountain Station Phone: 1-435-864-6670

---

A.B.T. PO #A03-008-417

---

SHIPPED VIA: ABF Freight - Prepaid & Add

---

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	04	Opti-Flow Burner Horizontal Fuel Distributor Deflector Assembly per A.B.T. Drawing #03008-500-A02-D0.
Quantity Back-Ordered = 30		

---

IP7\_028126

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/4/2004 2:13:15 PM  
**Subject:** Shipping status of ABT Materials

ABT has a flurry of shipments that will be coming in over the next week or two.

It is important that I be contacted as soon as the material listed below gets to Post 3 so that the material can be directed to where the work requiring this material is staged

The shipment listed below are on the road. There are many more to come and I will update the list as the status of the shipments are made known to me.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

Presently: Arrived SLC 11:50 AM today.

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

Presently: Arrived in SLC 11:00 AM today.

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: To arrive in SLC 22:51 today.

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

Presently: Transferred to UTAW truck in SLC this afternoon.

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

Presently: Arrived SLC 11:50 AM today.

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

Presently: Will arrive in Omaha, Ne - 3:00 PM today.

Pam / Gary: Attached are packing lists and shipping documents for four HFD's shipped yesterday.

**CC:** Gary Goold; James Nelson; Phil Hailes; sal@advancedburner.com;  
ssteede@teiservices.com; Tarkel Larson

**IP7\_028127**



**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/5/2004 11:32:35 AM  
**Subject:** Status of ABI Material - 03 05-04

ABT has a flurry of shipments that will be coming in over the next week or two.

It is important that I be contacted as soon as the material listed below gets to Post 3 so that the material can be directed to where the work requiring this material is staged

The shipment listed below are on the road. There are many more to come and I will update the list as the status of the shipments are made known to me.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

Presently: Arrived in Nephi at 9:20 AM today should arrive on site today.

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

Presently: Arrived in SLC at 7:20 AM this morning.

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: In SLC awaiting delivery.

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

Presently: Arrived on site March 5th at 11:00 AM

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

Presently: Left Nephi this morning should arrive on site today.

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

Presently: To arrive in Cheyenne Wy today at 16:15

**CC:** Gary Goold; James Nelson; Phil Hailes; sal@advancedburner.com;  
ssteede@teiservices.com; Tarkel Larson

**IP7\_028128**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/6/2004 1:14:21 PM  
**Subject:** Status of ABT Materials 3-06-04

ABT has a flurry of shipments that will be coming in over the next week or two.

It is important that I be contacted as soon as the material listed below gets to Post 3 so that the material can be directed to where the work requiring this material is staged

The shipment listed below are on the road. There are many more to come and I will update the list as the status of the shipments are made known to me.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

**Presently: Received 3/5/04**

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

**Presently: Received 3/5/04**

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: Loaded on UTAW Truck on 3/06/05.

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

**Presently: Received March 5th.**

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

**Presently: Received March 5th.**

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

Presently: Loaded onto a UTAW truck 3/6/04

SAL: WE HAVE 12 HFDs ON SITE AND SIX ON THE ROAD. TEI HAS INSTALLED ALL 12 HFDs ON THE 5TH FLOOR BURNERS AS OF TODAY. I HAVE HAD NO WORD FROM YOU CONCERNING ANY ADDITIONAL SHIPMENT OF HFDs. GIVEN THAT IT TAKES 5 DAYS TO GET THE HFDs ON SITE AND THERE ARE ON LY 6 MORE ON THE ROAD, I WOULD SAY THAT TEI WILL BE TWO-BLOCKED EARLY NEXT WEEK. WHAT IS THE STATUS ON THE REMAINING 30 HFDs.

**CC:** James Nelson; Phil Hailes; sal@advancedburner.com; ssteede@teiservices.com

**IP7\_028129**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/8/2004 10:12:45 AM  
**Subject:** Shipping Status of ABT material 03/08/04

The following is the shipping status of perforated plate and HFDs from ABT

1. 27 sheets of 4' x 8' 11 GA. perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

Presently: Received 3/5/04

2. 24 sheets of 4' x 10' 11 GA. perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

Presently: Received 3/5/04

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: Loaded on UTAW Truck on 3/06/05.

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

Presently: Received March 5th.

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

Presently: Received March 5th.

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

Presently: Loaded onto a UTAW truck 3/6/04

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped form Latrobe, PA Via ABF Freight, Pro no. 310214052

Presently: Scheduled to be in Omaha, Nebraska at 13:50 today.

**CC:** James Nelson; Phil Hailes; sal@advancedburner.com;  
ssteede@teiservices.com; Tarkel Larson

**IP7\_028130**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/9/2004 12:37:48 PM  
**Subject:** Shipping Status of ABT Material 03 09'09

The following is the shipping status of perforated plate and HFDs from ABT.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

**Presently: Received 3/5/04**

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

**Presently: Received 3/5/04**

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

**Presently: Received 3/9/04**

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

**Presently: Received 3/05/04**

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

**Presently: Received 3/5/04**

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

**Presently: Received 3/8/04**

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped form Latrobe, PA Via ABF Freight, Pro no. 310214052

Presently: Shipment is in Salt Lake City.

8. 10 Horizontal Fuel Diffusers, weighing 6200 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310216164.

Presently: To arrive in Omaha, Nebraska at 23:47 today.

Sal: Where is the angle and solid plate for the windbox baffling.

**IP7\_028131**

**CC:** Gary Goold; James Nelson; Phil Hailes; sal@advancedburner.com;  
ssteede@teiservices.com; Tarkel Larson

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/10/2004 9:58:43 AM  
**Subject:** Shipping Status of ABI Material 3/10/04

The following is the shipping status of perforated plate and HFDs from ABT.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

Presently: Received 3/5/04

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

Presently: Received 3/5/04

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: Received 3/9/04

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

Presently: Received 3/05/04

5. 50 sheets of 4' x 10' x 11 GA, perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

Presently: Received 3/5/04

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

Presently: Received 3/8/04

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped form Latrobe, PA Via ABF Freight, Pro no. 310214052

Presently: Loaded on UTAW today at

8. 10 Horizontal Fuel Diffusers, weighing 6200 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310216164.

Presently: To arrive in Cheyenne, Wyoming today at 14:45

Sal:

What is the PRO # for the angle and plate.

**IP7\_028133**

How is next shipment of HFDs being sent and who do we contact for shipping status

**CC:** Gary Goold; James Nelson; Phil Hailes; sal@advancedburner.com;  
ssteede@teiservices.com, Tarkel Larson

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/11/2004 10:54:40 AM  
**Subject:** Subject. Shipping Status of ABT Material 3/11/04

The following is the shipping status of perforated plate and HFDs from ABT.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

Presently: Received 3/5/04

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

Presently: Received 3/5/04

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: Received 3/9/04

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

Presently: Received 3/05/04

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

Presently: Received 3/5/04

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

Presently: Received 3/8/04

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped form Latrobe, PA Via ABF Freight, Pro no. 310214052

Presently: Loaded on UTAW today at

8. 10 Horizontal Fuel Diffusers, weighing 6200 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310216164.

Presently: Shipment is on a Utah and Wyoming truck.

9. 8 Horizontal Fuel Diffusers, weighing 6000 lbs - shipped from Latrobe , PA via Mercer Transportation.

**IP7\_028135**



Presently: Shipment is in St Louis, Missouri

Note: Drivers Randy and Donna Ridel can be contacted at 412-855-0228 or 412-289-9662. They figure to be in Utah on Friday (3/12/04).

10, 12 - 4'x10' sheets of 11 GA plate, 105 - 3" channel x 6.7 lb/ft x 40' and 13 - 6" channel x 6.7 lb/ft shipped out from Passaic County Welders via Pacer Transportation. This is a single driver and not a tag team truck. Truck should be on site Monday (3/15/04).

Presently: Load was picked up on Wednesday Afternoon 3/10/04.

Sal: We have 20 HFDs on site, 18 are on trucks this is a total of 38. What is the status on the remaining 10 HFDs?

CC: Gary Goold; James Nelson; Phil Hailes; sal@advancedburner.com; ssteede@teiservices.com; Tarkel Larson

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/12/2004 10:13:08 AM  
**Subject:** Shipping status of ABT Material 3/12/04

Presently: Received 3/05/04

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open  
-shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961,  
wt 3600 lbs

Presently: Received 3/5/04

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from  
Latrobe, PA via ABF Freight, Pro no. 310216153.

Presently: Received 3/8/04

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA Via ABF Freight,  
Pro no. 310214052

Presently: Loaded on UTAW today at

8. 10 Horizontal Fuel Diffusers, weighing 6200 lbs - shipped from  
Latrobe, PA Via ABF Freight, Pro no. 310216164.

Presently: Shipment is on a Utah and Wyoming truck scheduled to arrive today.

9. 8 Horizontal Fuel Diffusers, weighing 6000 lbs - shipped from Latrobe, PA via Mercer  
Transportation.

Presently: Shipment is in Grand Junction, Colorado. Randy figures to be on site sometime  
between 15:00 to 17:00 today.

Note: Drivers Randy and Donna Ridel can be contacted at 412-855-0228 or 412-289-9662. They  
figure to be in Utah on Friday (3/12/04)

10. 12 - 4'x10' sheets of 11 GA plate, 105 - 3" channel x 6.7 lb/ft x 40' and 13 - 6" channel x 6.7  
lb/ft shipped out from Passaic County Welders via Pacer Transportation. This is a single driver  
and not a tag team truck. Truck should be on site Monday (3/15/04).

Presently: Load was picked up on Wednesday Afternoon 3/10/04.

11. 10 Horizontal Fuel Diffusers, weighing 7200 lbs - to ship from Latrobe, PA via Mercer  
Transportation:

Presently: Shipment is to be picked up by a tag team this afternoon around 13:00.

Note: Tag team is to call me with phone numbers this afternoon so that I can track their progress.

**IP7\_028137**

CC: Gary Goold; James Nelson; Phil Hailes: sal@advancedburner.com;  
ssteede@teiservices.com; Tarkel Larson; truckdispatch@aol.com

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 3/13/2004 9:11:23 AM  
**Subject:** Status of ABF Materials

The following is the shipping status of perforated plate and HFDs from ABT.

1. 27 sheets of 4' x 8' 11 GA. perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

**Presently: Received 3/5/04**

2. 24 sheets of 4' x 10' 11 GA. perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

**Presently: Received 3/5/04**

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

**Presently: Received 3/9/04**

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

**Presently: Received 3/05/04**

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

**Presently: Received 3/5/04**

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

**Presently: Received 3/8/04**

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped form Latrobe, PA Via ABF Freight, Pro no. 310214052

**Presently: Received 3/10/04**

8. 10 Horizontal Fuel Diffusers, weighing 6200 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310216164.

**Presently: Received 3/12/04 at 9:00 AM.**

9. 8 Horizontal Fuel Diffusers, weighing 6000 lbs - shipped from Latrobe , PA via Mercer Transportation.

**IP7\_028139**

**Presently: Received 3/12/04 at 5:30 PM.**

10. 12 - 4'x10' sheets of 11 GA plate, 105 - 3" channel x 6.7 lb/ft x 40' and 13 - 6" channel x 6.7 lb/ft shipped out from Passaic County Welders via Pacer Transportation. This is a single driver and not a tag team truck. Truck should be on site Monday (3/15/04)

Presently: Shipment is at the Missouri - Kansas Line as of 8:30 AM this morning. Driver figures to be at IPSC, Monday Morning at 8:30 AM.

Note: The driver is a Mr. Dressen and he can be contacted thru his dispatcher David Smith at 800-213-1957.

11. 10 Horizontal Fuel Diffusers, weighing 7200 lbs - to ship from Latrobe, PA via Mercer Transportation:

Presently: They are in Ohio as of 8:30 AM. They plan to be in Delta by 8:00 PM Sunday night

Note: The drivers are: Rod and Debbie Dickey 724-372-0095 or 724-372-3315

Pam: They figure to be at IPSC around 8:00 PM Sunday Night. TEI has advised me that they will unload the truck when it arrives.

**CC:** Gary Goold; James Nelson; Phil Hailes; sal@advancedburner.com; ssteede@teiservices.com; Tarkel Larson

**From:** Jerry Finlinson  
**To:** James Nelson; Jon Christensen  
**Date:** 3/3/2004 12:50:18 PM  
**Subject:** Fwd. RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

We need to evaluate this offer and see if it's reasonable to us.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Andy Chew <achew@airmonitor.com> 3/3/2004 12:38:08 PM >>>  
Jerry,

Air Monitor agrees to provide IPSC with a \$6,000 credit in lieu of providing the tubing and fittings for the signal connections from the burner fronts to the transmitter/purge cabinets as per AMC proposal number 102403-1.1 dated 10-24-2003 for Air Monitor work order number 50633 and ABT PO A03-008-413. This \$6,000 credit can be used for future wind tunnel performance testing in Air Monitor's test facility in Santa Rosa, CA.

I will reiterate that we think copper tubing is a better choice for use with our equipment than carbon steel pipe for reasons previously stated.

Thank you.

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

-----Original Message-----

**From:** Andy Chew  
**Sent:** Monday, March 01, 2004 1:22 PM  
**To:** 'Jerry Finlinson'  
**Subject:** RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Jerry:

AMC is generally OK with using CS pipe for signal lines contingent upon:

1. Threaded connections are minimized and wherever possible connections are to be welded.
2. Something other than carbon steel unions or pipe couplings be used as the signal line 'break' fitting. With time and vibration these are prone to

**IP7\_028141**

leakage. We were just involved with utility in diagnosing and fixing this problem.

3. The plant air used for purge is dry. If it has moisture eventually scale/rust will occur inside the pipe. That scale/rust can flake off and eventually end up plugging the sensing holes from the inside

If you were choosing to use copper, which is what we recommend after SST tubing, is doing each signal line with a MPT x sweat fitting at the burner wall and flex hose connection, copper tube with sweat straight connectors or elbows to connect the sections, a copper sweat union near the AMC enclosure and another MPT x sweat fitting to connect to the enclosure. Nice thing about copper is that if there is ever a need to remove part of the signal line the repair is quite easy with a few straight connectors.

Again, I will be getting back to you on what it would have cost us in material to make these connections.

Regards,

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Monday, March 01, 2004 9:26 AM  
To: Andy Chew  
Subject: RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Andy,

Thanks for checking into that.  
As it turns out, my boss doesn't want me to use tubing because our plant standard is to use welded carbon steel piping in this application. So we've already got that steel piping on order. Let's work out a reasonable credit with you for how much the tubing would have cost. If it was copper it would have been around \$6000 and if it was stainless it would have been \$12K to \$15K. I do believe the spec said stainless, didn't it?

Anyway, let's work up a mutually agreeable credit for that and we'll apply it towards some additional windtunnel testing after we know where our burners are set or decrease the price a bit.

Thanks,  
Jerry

**IP7\_028142**

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/27/2004 9:52:47 AM >>>  
Jerry,

I will have quotes from our copper tubing/fitting vendors soon to compare.  
A couple of things:

All of the signal connections on the cabinets, burner fronts and flex connections are either 1/2" male or 1/2" female pipe. Why are the fittings quoted 3/4" MNPT? I think they should be both 1/2" MNPT x 3/4" tube sweat and 1/2" FNPT x 3/4" tube sweat. You will eliminate the need to provide more fittings to reduce from 3/4" to 1/2" threaded pipe connections.

I reviewed the proposal and it indicates AMC will supply "tubing, fittings, expansion joints/flex connections" but there is no mention of tube trays or supports. I asked our sales group about this and they confirmed trays/supports are not our scope.

Thank you.

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Friday, February 27, 2004 6:58 AM  
To: Andy Chew  
Subject: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Andy,

We got a quote together from our TEI contractor.  
They are recommending that we go with soft copper tubing

3/4" soft copper tubing 6100 ft x .76/ft = \$4636  
3/4" M NPT x 3/4" tube fitting 192 x \$8 = 1536  
3/4 brass tube coupling 300 x \$9 = \$2700  
6" tube tray 1120 ft x \$6/ft = \$6720

Total material cost = \$15592

installation = \$54,141 We'll be covering this cost, but it seems very high.

**IP7\_028143**



They also provided an estimate for hard copper tubing which was \$15686 for pipe and fittings.  
but are recommending us to go with the soft copper.

Let us know if this seems reasonable to you  
Should we go ahead and order the tubing and fittings or do you want to provide them and get them here by the end of next week?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/24/2004 10:11:04 AM >>>  
Jerry,

Any word on the tubing cost?

Thanks.

Andy

-----Original Message-----

From: Andy Chew  
Sent: Friday, February 20, 2004 1:46 PM  
To: 'Jerry Finlinson'  
Subject: RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

Jerry,

Yes, please get a written quote and advise. I think we should stick with the 3/4" copper tube in straight-rigid plumbing grade for use with soldered (sweat) joint connections for all the runs both short and long. It will be simpler and cleaner that way.

Let me know.

Thanks.

Andy

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Friday, February 20, 2004 1:21 PM  
To: Andy Chew  
Subject: RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

**IP7\_028144**

Andy

My cost of 80 cents per foot was not a real quote

I called the local hardware store and he said that 100 ft would be 99 c/ft, but it would be much cheaper to order 5000 ft, so maybe we could get it for 50 c or so. Do you think we should use 1/2 inch on the runs less than 50 ft?

Would you like me to get a real quote to compare?

We are talking rigid copper pipe that solders together, right?

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/20/2004 2:14:45 PM >>>

Jerry,

I am getting a quote on our end for the 3/4" tubing to compare with your tubing cost of 0.80 cents per foot. If it is less expensive for you to supply then we are OK with the option to provide IPSC with a credit against future technician labor and/or wind tunnel testing.

I will get back to you on or before Monday 2/23/04.

Thank you.

Andy

**CC:** Bill Morgan; Howard Hamilton; Ken Nielson

**IP7\_028145**

**From:** Howard Hamilton  
**To:** Phil Hailes  
**Date:** 1/9/2004 1:31:41 PM  
**Subject:** TEL Unloading of Burners

Darrell Steede has advised me that he is willing to unload burners Monday Thru Saturday between the hours of 7:00 AM and 5:00 PM.

I contacted Chuck Onitas at ABT and requested that he notify the trucking company delivering the burners of the above.

Pam Snyder: Truckers bringing in burners that arrive after 5:00 PM will need to wait until the next day to be unloaded and burners arriving on Sunday will have to wait until Monday Morning to be unloaded.

**CC:** James Nelson; Pam Snyder; sal@advancedburner.com;  
ssteede@teiservices.com

**IP7\_028146**

**From:** Howard Hamilton  
**To:** Phil Hailes  
**Date:** 12/22/2003 3:18:10 PM  
**Subject:** 12/22/03 Telecon with Sal Farrar of ABT

Talked with Sal today about the following:

1. Placement of lifting lugs on Burners.

- a. Sal advises that the shops will be welding lifting lugs on the burners to assist with the fabrication and shipping of the burners.
- b. The shop placement of the lugs will be based on the center of gravity of the burner.
- c. ABT will probably have the center of gravity figured this week.
- d. Sal hope to be able send me a sketch showing the center of gravity and shop lug placement by next week.

Note: I will forward a copy to TEI when I receive it.

2. Erection Arrangement Drawings:

- a. Sal informs me that ABT is scheduled to have erection arrangement drawings available by 1/16/03.
- b. Sal also advised the erection arrangement drawings will consist of several drawings which will include the installation instructions for the burners.

Note: I will check back with Sal the week of 1/12/04 to see what the status of the erection arrangement drawings are.

3. ABT Service Representative for construction and start-up.

- a. Sal states that ABT has not decided yet who will be the service representative, whether it will be two people or when they will be on site.

Note: I asked about George Schaizzi and Sal stated that he was not sure if George will be our man.

- b. Sal informs me that ABT will be making this decision sometime in January, probably later in the month.

**CC:** James Nelson; Jerry Finlinson; sal@advancedburner.com;  
tstead@teiservices.com

**IP7\_028147**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/18/2004 5:09:53 PM  
**Subject:** 12th and Last Shipment of Burners

Brad from Pacer Transportation called this afternoon and advised me of the following:

1. Pacer has found a trucker out of Wayne, New Jersey to pick up the trailer in Pennsylvania.
2. He will pick up the trailer with the burners and take it to Passaic County Welders arriving at their fabrication facility around 9:00 AM tomorrow.
3. A trucker Ken Rung will be waiting at Passaic County Welder for the trailer with the burners to arrive with his truck and trailer.
4. Passaic County Welders will transfer the load of burners and 32 burner rings to Ken Rung's Truck.
5. Ken will Leave New Jersey upon being loaded with and ETA of Monday sometime.

**CC:** James Nelson; Pam Snyder; sal@advancedburner.com; Tarkel Larson; truckdispatch@aol.com

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/18/2004 12:23:29 PM  
**Subject:** 12th Load Update

Brad at Pacer Transportation called me and advised they have a trucker out of Indiana that they are working with to pick up the 12th load in Pennsylvania. Brad advises that they are tentatively shooting to be on site sometime Monday 2/23/04 with the final load of burners. This could be late in the evening on Monday. Brad asked if the trucker could park out at the gate if they arrive after hours Monday Night. I told Brad that truckers have used a turn out on Brush Wellman Road to park until 7:00 AM in the morning.

Pam: Have the guards direct the driver to this area if they arrive after hours on Monday.

**CC:** James Nelson; Pam Snyder; Phil Hailes; sal@advancedburner.com; Tarkel Larson

**IP7\_028149**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 2/17/2004 10:27:23 AM  
**Subject:** ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**CC:** James Nelson; sal@advancedburner.com; ssteede@teiservices.com; Tarkel Larson; truckdispatch@aol.com

**From:** Howard Hamilton  
**To:** Phil Hailes  
**Date:** 12/17/2003 1:36:35 PM  
**Subject:** ABT Burners

Called Sal Ferrara of ABT concerning the 48 burners that will be shipped out for the Unit 2 Outage and discussed the following:

1. ABT is in the process of fabricating the first burner for this project. Once this burner is fabricated they will be able to accurately give shipping dates for the 48 burners they will be sending us.
2. tentatively ABT plans on having the first burner fabricated by the end of December 2003.
3. Tentatively ABT plans on having the first burner shipment to arrive on site by mid January.
4. The burners weigh 7500 lbs each and will be coming by flat bed truck. The burners will be 10 ft long and approximately 5 to 6.5 ft in diameter.

Note: The 90 degree elbow inlet will not be attached to the burner. It will probably be sent on the flat bed that the burners come on as a separate item.

5. Sal figures that ABT will be able to ship three to four burners on a truck. This will mean that IPSC will be receiving 15 to 12 truck loads of burners.
6. Sal advises that they plan on shipping 8 to 10 burners a week. This will mean that IPSC will be receiving 2 to 3 truck per week once ABT begins shipping burners and the shipments will extend out until mid February.
7. Sal recommends unloading the burners with a fork lift and nylon slings. The slings will be hung from the forks. Sal will be sending in a sketch showing where to place the slings when picking up the burners.

Note: The sketch should be on site by this Friday 12/19/03. Sal states that the burners should not be lifted from the bottom as they are awkward to handle from this position.

Note: Gary Gould advises that IPSC has a 30,000 lbs forklift that will be able to unload the burners if IPSC has to do the unloading.

8. Sal recommends that the burners be stored inside so they do not become wet or muddy. The burners will be shipped with most of the instrumentation attached to the burners.
9. I asked Sal if it would be possible to shrink wrap the burners in case they have to be installed outside for a time. Sal will get back with an answer by Monday 12/22/03.

Note: IPSC's Fork Lift or hydraulic cranes will not pass through the doorway of Warehouse 4's storage area. It will be very difficult to place the burners inside the warehouse and then to remove them. If a contractor is not ready to stage the burners inside the boiler building, when they arrive, they will need to be stored outside if they are shrink wrapped or tarped, or placed inside in another area such as the turbine area if they are not.

10. Sal informed me that the burners can come with lifting lugs installed to facilitate the rigging of the burners inside the boiler building. Two lugs can be placed in several different positions

**IP7\_028151**



depending on how the construction contractor will want to rig the burners

11 ABT needs to be notified by the end of December 2003 so that ABT can incorporate the placement of the lugs with the fabrication of the burners.

Note: Sal will email or fax me a sketch of the different lifting lug arrangements by this Friday 12/17/03.

12. Sal states that there will be materials that will be shipped separately from the burners. ABT has an erection arrangement drawing that shows the burners and all for the materials supplied by ABT. The drawing also shows which items will be shipped separately from the burners.

Note: Sal will advise me by Monday 12/22/03 when this drawing will be ready for viewing.

13. Sal advised that all shipments will have shipping papers attached that clearly spell out what items are included in the shipment be it in a box, package crate or pallet, The shipping papers will jive with the mark numbers called out on the ABT erection arrangement drawings.

CC: Gary Goold; James Nelson; Pam Snyder; sal@advancedburner.com, Vance Bishop

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 1/13/2004 9:38:20 AM  
**Subject:** ABI Burners

ABT is pushing back their original schedule 10 days

The first burners will not arrive on site until 1/27/04 not 1/15/04 as originally scheduled.

ABT to have an official schedule out this week. Once I have a copy I will forward it to you.

ABT is planning to use 55 ft long flatbeds with 4 burners on a truck.

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/23/2004 9:03:22 AM  
**Subject:** Burner Material Status 2-23-04

1. The 12th and final load of burners are in Green River Wyoming as of 7:15 AM this morning, which is 222 miles from Delta. The trucker Ken Rung should arrive on site around noon today. This truck will have 4 burners and the balance of the 48 seal rings ABT is to send us.

2. Sal Ferrara advises that the VDF's should be on site Wednesday. Used PRO #310216025 at ABF's Web Site and was informed that the truck left Cheyenne, Wyoming with an eta into Salt Lake City around 15:16 today. There are 10 pcs weighing 11,000 pounds. I would assume the pcs are boxes or pallets. This is probable a covered truck. IPSC has an unloading dock out between Warehouse 2 and 3 and arrangements can be made with GSB if required.

3. Sal Ferrara told me today that the fasteners for the HFDs will be sent out UPS. Sal will inform me of the tracking number when it becomes available.

4. Sal Ferrara states that he still does not have an ETA for the HFD's. He will advise me of the PRO # when it become available.

5. Sal Ferrara believes the dozen pins to replaced pins that are missing on the outer spin vanes was shipped with the rod replacements. Sal will confirm this and get back to me latter today. If you have seen this box let me know.

6. Jerry Finlinson sent me an email advising that the packing gland fittings for the ABB Scanners was sent out FEDEX on 2/11. Checking the pro number at the FEDEX web site shows that the packing glands were received 2/17/04 by Mason Warnick. Jerry will check this out.

**CC:** James Nelson; Jerry Finlinson; Pam Snyder; Phil Hailes;  
sal@advancedburner.com; Tarkel Larson; truckdispatch@aol.com

**IP7\_028154**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 2/10/2004 7:53:40 AM  
**Subject:** Burner Shipping Status

1. Load 5 arrived Monday Morning 02/09/04
2. Load 6 arrived Saturday 02/06/04
3. Load 7 was in New Mexico as of 17:00 Monday. The trucker figures to be at IPSC Tuesday afternoon. This will be the first load of CCW Burners.
4. Load 8 was picked up Friday. Pacer has not heard from Terry Harris the trucker since he left last Friday. He could be in today or tomorrow judging from past loads.
5. Load 9 will be picked up today by trucker Bobby Barnes.
6. The 10th set of 4 burners is to be released by Passaic County Welders on Thursday.

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com, truckdispatch@aol.com

**From:** Howard Hamilton  
**To:** truckdispatch@aol.com  
**Date:** 1/28/2004 7:02:28 AM  
**Subject:** Direction to IPP from I-70

Brad: Truckers should call TEI at 435-864-3095 or 3097 as they will always have someone in their office trailer from 6:30 AM to 5:30 PM. Truckers delivering on Saturday (7:00 am to 5:00 PM) need to let TEI know ASAP. TEI will make arrangements to come out and unload on Saturday's if contacted 24 hour in advance. Truckers delivering on Sunday need to wait until Monday to unload.

1. Head North to Salt Lake at the I-70 / I-15 Intersection.
2. Travel 40 Miles North on I-15 to Holden Utah.
3. At I-15 Exit 178 in Holden get off on Highway 50 which is on the West side of the exit.
4. Take US Highway 50 to Delta Utah and travel Northwest a distance of 24 miles.
5. 4 miles before getting into Delta Take State by-pass Highway 136 to US Highway 6 a distance of 3 miles.
6. Turn right onto Highway 6 and travel North for a distance of 8 miles.
7. Turn left off Highway 6 onto Brush Wellman Road State Highway 174.

Note: The Brush Wellman Beryllium Plant is located at the intersection of highway 6 and Brush Wellman Road.

8. Travel about 12 miles West on Brush Wellman Road to the IPP Power Plant.

Note: Turn left off Brush Wellman Road onto the IPSC Material Road that is clearly marked with road signs, and go to Post 3. You will be searched by the guard and given a vehicle pass and an escort into the plant.

**CC:** hamilton@delwave.com; Pam Snyder; sal@advancedburner.com;  
ssteede@teiservices.com

**IP7\_028156**

**From:** Howard Hamilton  
**To:** Pam Snyder, ssteede@teiservices.com  
**Date:** 1/22/2004 11:05:13 AM  
**Subject:** First Shipment of ABT Burners

1. The first shipment of ABT Burners will leave Passaic County Welders out of New Jersey, today.

2. Pacer Transport will be delivering the burners Monday (01/26/04) or Tuesday (01/27/04). Note that Pacer Transportation has recently purchase Hawk Trucking. Hawk Trucking may still be written on the side of the trucks.

Note: Brad of Pacer Transport (412-343-9909) is the man to contact concerning shipping information concerning the burners.

Note: I advised Brad that TEI is willing to unload burners Monday thru Friday, 7:00 AM to 5:00 PM.

3. The Pacer Trucker is to call IPSC 24 hours prior to arriving on site.

Note: I have requested that Brad have the Pacer Transport Truckers making the deliveries contact TEI at 435-864-3095 or 309/. TEI will be on site Monday thru Saturday 7:00 AM to 5:30 PM. TEI will always have someone in the TEI Office Trailer and they are doing the unloading. James Nelson will be the second contact if for some reason TEI is not available and I will be the third contact if TEI or James is not available. TEI will need to contact Post 3 and me so that Security is aware of when a shipment of burners will be on site and I can be available to inspect for damage.

4. The truck will have 4 burners on it.

5. Pacer is scheduled to pick up a second load of burners on Tuesday 01/27/04. This would mean that the second shipment will not arrive until Friday (01/30/04) or Saturday (01/31/04). Pacer Transport has not been advised when to pick up the third shipment.

Note: I will want to weigh the first truck fully loaded and after it is unloaded to verify a weight of the burners for rigging purposes. Please have Post 3 contact me on channel 1 or extension 6436 and I will escort the truck to the scales when he arrives. If the truck tries to leave after it is unloaded but before he has been weighed please have the Post 3 guard contact me before allowing the truck to leave the site.

**CC:** Gary Goold; James Nelson; Jerry Finlinson; Jon Finlinson; Phil Hailes;  
ssteede@teiservices.com

**IP7\_028157**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 1/28/2004 9:42:52 AM  
**Subject:** First Shipment of Burners

The first truck load of burners is projected to be on site around 4:30 PM today

The Pacer truck driver called me at 9:30 and advised me that he was in Denver, Colorado which is 412 miles from Delta.

He lost 2 hours this morning getting his truck fueled in Denver.

Steve will call TEI when he is on I-15.

**CC:** James Nelson; Jerry Finlinson; Jon Finlinson; Phil Hailes;  
sal@advancedburner.com; ssteede@teiservices.com; truckdispatch@aol.com

**IP7\_028158**

**From:** Howard Hamilton  
**To:** Pam Snyder: ssteede@terservices.com  
**Date:** 1/22/2004 10:42:05 AM  
**Subject:** First Shipment of Burners

1. The first shipment of ABT Burners will leave Passaic County Welders out of New Jersey, today.
2. Pacer Transport will be delivering the burners Monday (01/26/04) or Tuesday (01/26/04). Note that Pacer Transportation has recently purchase Hawk Trucking. Hawk Trucking maybe still written on the side of the trucks.

Note: Brad of Pacer Transport (412-343-9909) is the man to contact concerning shipping information concerning the burners.

Note: I advised Brad that TEI is willing to unload burners Monday thru Friday, 7:00 AM to 5:00 AM.

- 3 The Pacer Trucker is to call IPSC 24 hours prior to arriving on site.

Note: I have requested that Brad have the Pacer Transport Truckers making the deliveries contact TEI at 435-864-3095 or 3097. TIE will be on site Monday thru Saturday 7:00 AM to 5:30 PM. TEI will always have someone in the TEI Office Trailer and they are doing the unloading. James Nelson will be the second contact if for some reason TEI is not available and I will be the third contact if TEI or James is not available. TEI will need to contact Post 3 and me so that Security is aware of when a shipment of burners will be on site and I can be available to inspect for damage.

4. The truck will have 4 burners on it.

5. Pacer is scheduled to pick up a second load of burners on Tuesday 01/27/04. This would mean that the second shipment will not arrive until Friday or Saturday. Pace has not been advised when to pick up the third shipment.

Note: I will want to weigh the first truck fully loaded and after it is unloaded to verify a weight of the burners for rigging purposes. Please have Post 3 contact me on channel 1 or extension 6436 and I will escort the truck to the scales when he arrives. If the truck tries to leave after it is unloaded but before he has been weighed please have the Post 3 guard contact me before allowing the truck to leave the site.

**CC:** James Nelson; Jerry Finlinson; Jon Finlinson; Phil Hailes; sal@advancedburner.com; ssteede@teiservices.com

**IP7\_028159**



**From:** Howard Hamilton  
**To:** tsteede@teiservices.com  
**Date:** 12/19/2003 7:53:00 AM  
**Subject:** Fwd: ABT Burners

This is the first email I've sent to ABT.

In Item 11 I have requested ABT send me a sketch for possible lug placement. Once I have the sketch in hand I will forward it to you for your review. If you think lugs will help let me know and I will request that they be installed.

>>> Howard Hamilton 12/17/2003 1:36:35 PM >>>

Called Sal Ferrara of ABT concerning the 48 burners that will be shipped out for the Unit 2 Outage and discussed the following:

1. ABT is in the process of fabricating the first burner for this project. Once this burner is fabricated they will be able to accurately give shipping dates for the 48 burners they will be sending us.
2. tentatively ABT plans on having the first burner fabricated by the end of December 2003.
3. Tentatively ABT plans on having the first burner shipment to arriving on site by mid January.
4. The burners weigh 7500 lbs each and will be coming by flat bed truck. The burners will be 14 ft long and approximately 5 to 6.5 ft in diameter.

Note: The 90 degree elbow inlet will not be attached to the burner. It will probably be sent on the flat bed that the burners come on as a separate item.

5. Sal figures that ABT will be able to ship three to four burners on a truck. This will mean that IPSC will be receiving 15 to 12 truck loads of burners.

6. Sal advises that they plan on shipping 8 to 10 burners a week. This will mean that IPSC will be receiving 2 to 3 truck per week once ABT begins shipping burners and the shipments will extend out until mid February.

7. Sal recommends unloading the burners with a fork lift and nylon slings. The slings will be hung from the forks. Sal will be sending in a sketch showing where to place the slings when picking up the burners.

Note: The sketch should be on site by this Friday 12/19/03. Sal states that the burners should not be lifted from the bottom as they are awkward to handle from this position.

Note: Gary Gould advises that IPSC has a 30,000 lbs forklift that will able to unload the burners if IPSC has to do the unloading.

8. Sal recommends that the burners be stored inside so they do not become wet or muddy. The burners will be shipped with most of the instrumentation attached to the burners.

9. I asked Sal if it would be possible to shrink wrap the burners in case they have to be installed outside for a time. Sal will get back with an answer by Monday 12/22/03.

Note: IPSC's Fork Lift or hydraulic cranes will not pass through the door way of Warehouse 4's

**IP7\_028160**

storage area. It will be very difficult to place the burners inside the warehouse and then to remove them. If a contractor is not ready to stage the burners inside the boiler building when they arrive, they will need to be stored outside if they are shrink wrapped or tarped, or placed inside in another area such as the turbine area if they are not.

10. Sal informed me that the burners can come with lifting lugs installed to facilitate the rigging of the burners inside the boiler building. Two lugs can be placed in several different positions depending on how the construction contractor will want to rig the burners.

11. ABT needs to be notified by the end of December 2003 so that ABT can incorporate the placement of the lugs with the fabrication of the burners.

Note: Sal will email or fax me a sketch of the different lifting lug arrangements by this Friday 12/17/03.

12. Sal states that there will be materials that will be shipped separately from the burners. ABT has an erection arrangement drawing that shows the burners and all for the materials supplied by ABT. The drawing also shows which items will be shipped separately from the burners.

Note: Sal will advise me by Monday 12/22/03 when this drawing will be ready for viewing.

13. Sal advised that all shipments will have shipping papers attached that clearly spell out what items are included in the shipment be it in a box, package crate or pallet, The shipping papers will jive with the mark numbers called out on the ABT erection arrangement drawings.

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 2/20/2004 2:18:48 PM  
**Subject:** Fwd. RE: ABT Burner Shipping Status

Please have Post 3 contact me when this shipment arrive. Thanks

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/20/2004 2:05:35 PM >>>  
Howard,  
The VFD's and ceramic installation kits shipped today via ABF Freight.  
ABF Time Saver #OFY3100514-A, ABT Freight System 310 216 025. Delivery  
noted on bill of lading to be by 2/25.  
The HFD's will ship by next Friday, 2/27.  
Sal

-----Original Message-----

From: Salvatore Ferrara [<mailto:sal@advancedburner.com>]  
Sent: Wednesday, February 18, 2004 4:13 PM  
To: 'Howard Hamilton'; 'Pam Snyder'  
Cc: 'tarkel@advancedburner.com'; 'truckdispatch@aol.com'; 'James  
Nelson'; 'ssteede@teiservices.com'  
Subject: RE: ABT Burner Shipping Status

Howard,  
The VFD's and ceramic kits will complete by this Friday and we will ship  
them then, as not to impact your planned installation at the first of  
the outage. I'll provide you with the truck information at time of  
shipment.  
I don't know just yet on when next week the HFD's will ship, I'll let  
you know later this week.  
Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Wednesday, February 18, 2004 10:20 AM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com); Pam Snyder  
Cc: [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); [truckdispatch@aol.com](mailto:truckdispatch@aol.com); James Nelson;  
[ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: RE: ABT Burner Shipping Status

Sal this could impact TEI as they will want to start work at the first  
of the outage installing the VFDs.

When you respond with and ETA please provide the following  
information:

1. Provide a contact with the trucking company so that we can track the  
shipment like we have done with Pacer and the burners.
2. Provide information as to where the VFDs, HFDs, and related  
hardware are coming from and is the shipment to be shipped on a flatbed  
or be inclosed truck.

IP7\_028162

Note: James this should address your email requesting the status of the flow straightening devices

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/17/2004 11:58:47 AM  
>>>

Howard,

We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Tuesday, February 17, 2004 12:27 PM

To: Pam Snyder

Cc: [sal@advancedburner.com](mailto:sal@advancedburner.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); [truckdispatch@aol.com](mailto:truckdispatch@aol.com); James Nelson; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

Subject: ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/17/2004 5:06:12 PM  
**Subject:** Fwd. Shipping Status

Give to Isely

>>> Howard Hamilton 2/17/2004 5:05:17 PM >>>

1. Load 10 is in New Mexico as of this afternoon. The trucker figures to be on site sometime on Wednesday (02/18/05)

2. Load 12 was picked up this afternoon. The truck driver Maxine figures to arrive on site Friday sometime. This truck has the balance of the 36 angle replacement rings.

**From:** Howard Hamilton  
**To:** Boyd Cowley; Joe Duwel; Jon Finlanson; Ken Lebbon; Richard Schmit  
**Date:** 1/9/2004 2:50:57 PM  
**Subject:** Fwd: Sunday Delivery of OFA Steel

>>> Howard Hamilton 1/9/2004 2:43:36 PM >>>

Darrell Steede has advised that a load of structural steel for the OFA System will probably arrive on site this Sunday, January 11, 2004.

Darrell has directed the truck driver to use the phone at Post 3 to contact Security to let the truck on site.

I have authorized this delivery with Security.

Contact Darrell at:

Cell 251-402-0095  
Homes 864-2287

Darrell will come on site to unload this truck upon being contacted

**IP7\_028165**

**From:** Howard Hamilton  
**To:** Jon Finlinson  
**Date:** 1/9/2004 2:51:57 PM  
**Subject:** Fwd: TEL Unloading of Burners

>>> Howard Hamilton 1/9/2004 1:31:41 PM >>>

Darrell Steede has advised me that he is willing to unload burners Monday Thru Saturday between the hours of 7:00 AM and 5:00 PM.

I contacted Chuck Onitas at ABT and requested that he notify the trucking company delivering the burners of the above.

Pam Snyder: Truckers bringing in burners that arrive after 5:00 PM will need to wait until the next day to be unloaded and burners arriving on Sunday will have the wait until Monday Morning to be unloaded.

**From:** Howard Hamilton  
**To:** Pam Snyder; Salvatore Ferrara  
**Date:** 2/18/2004 8:20:22 AM  
**Subject:** RE: ABT Burner Shipping Status

Sal this could impact TEI as they will want to start work at the first of the outage installing the VFDs.

When you respond with and ETA please provide the following information:

1. Provide a contact with the trucking company so that we can track the shipment like we have done with Pacer and the burners.
2. Provide information as to where the VFDs, HFDs, and related hardware are coming from and is the shipment to be shipped on a flatbed or be inclosed truck.

Note: James this should address your email requesting the status of the flow straightening devices.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/17/2004 11:58:47 AM >>>

Howard,

We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Tuesday, February 17, 2004 12:27 PM

To: Pam Snyder

Cc: [sal@advancedburner.com](mailto:sal@advancedburner.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); [truckdispatch@aol.com](mailto:truckdispatch@aol.com); James Nelson; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

Subject: ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**CC:** James Nelson; [ssteede@teiservices.com](mailto:ssteede@teiservices.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); [truckdispatch@aol.com](mailto:truckdispatch@aol.com)

**IP7\_028167**



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 2/17/2004 12:02:36 PM  
**Subject:** RE: ABT Burner Shipping Status

Howard,

We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.

Sal

-----Original Message-----

**From:** Howard Hamilton [mailto:howard-h@ipsc.com]  
**Sent:** Tuesday, February 17, 2004 12:27 PM  
**To:** Pam Snyder  
**Cc:** sal@advancedburner.com; tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com  
**Subject:** ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**CC:** <tarkel@advancedburner.com>, <truckdispatch@aol.com>, "James Nelson" <JIM-N@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028168**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com> - "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 2/18/2004 2:16:41 PM  
**Subject:** RE: ABT Burner Shipping Status

Howard,

The VFD's and ceramic kits will complete by this Friday and we will ship them then, as not to impact your planned installation at the first of the outage. I'll provide you with the truck information at time of shipment.

I don't know just yet on when next week the HFD's will ship, I'll let you know later this week.

Sal

-----Original Message-----

**From:** Howard Hamilton [mailto:howard-h@ipsc.com]  
**Sent:** Wednesday, February 18, 2004 10:20 AM  
**To:** sal@advancedburner.com; Pam Snyder  
**Cc:** tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com  
**Subject:** RE: ABT Burner Shipping Status

Sal this could impact TEI as they will want to start work at the first of the outage installing the VFDs.

When you respond with and ETA please provide the following information:

1. Provide a contact with the trucking company so that we can track the shipment like we have done with Pacer and the burners.
2. Provide information as to where the VFDs, HFDs, and related hardware are coming from and is the shipment to be shipped on a flatbed or be inclosed truck.

Note: James this should address your email requesting the status of the flow straightening devices.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/17/2004 11:58:47 AM  
>>>

Howard,

We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.

Sal

-----Original Message-----

**From:** Howard Hamilton [mailto:howard-h@ipsc.com]  
**Sent:** Tuesday, February 17, 2004 12:27 PM  
**To:** Pam Snyder  
**Cc:** sal@advancedburner.com; tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com

Subject: ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

CC: <tarkel@advancedburner.com>, <truckdispatch@aol.com>, "James Nelson"  
<JIM-N@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028170**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 2/17/2004 12:02:36 PM  
**Subject:** RE: ABT Burner Shipping Status

Howard,

We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.

Sal

-----Original Message-----

**From:** Howard Hamilton [mailto:howard-h@ipsc.com]  
**Sent:** Tuesday, February 17, 2004 12:27 PM  
**To:** Pam Snyder  
**Cc:** sal@advancedburner.com; tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com  
**Subject:** ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**CC:** <tarkel@advancedburner.com>, <truckdispatch@aol.com>, "James Nelson" <JIM-N@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028171**

**From:** Bret Kent  
**To:** Boyd Cowley; Joe Duwel; Jon Finlinson; Ken Lebbon; Pam Snyder; Richard Schmit  
**Date:** 2/9/2004 8:05:35 AM  
**Subject:** Receiving Hours For TEI

By way of information.

TEI is receiving and unloading material for the Burners and Air Heaters per the following schedule:

**Monday - Saturday**  
**6:30 AM to 5:00 PM**

Someone from T.S. will be here during this schedule to authorize them onsite and inspect material as it is unloaded.

The following companies are aware of this schedule. Should a truck arrive outside of these hour, they have been instructed that they will have to wait until TEI is onsite to unload them.

**Air Heaters**

Alstom Air Preheater Company  
New Tech Transports (Or a carrier contracted to them)

**Burners**

Advanced Burner Technology  
Pacer (Or a carrier contracted to them)

**CC:** Dave Hahn; Howard Hamilton; James Nelson; Phil Hailes

**From:** Howard Hamilton  
**To:** Phil Hailes; Salvatore Ferrara  
**Date:** 1/12/2004 2:23:15 PM  
**Subject:** RE: Contract 04-45606, Burner Model

Please do not shrink wrap the burners. We have a contractor on site and will store the burners as they arrive, inside the boiler.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 1/12/2004 1:52:40 PM >>>

Howard/Phil,

The cost to shrink wrap the burner modules (to cover all openings on each end of the burner) would be a total of \$18,700 for all 48 assemblies. Please advise by 1/14/04 should you wish to proceed with this change so we have sufficient time to order materials and install in time for the first shipments.

Regards,  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, December 17, 2003 5:22 PM  
To: sal@advancedburner.com; Phil Hailes  
Cc: Gary Goold; James Nelson  
Subject: Re: Contract 04-45606, Burner Model

Phil: Be advised that Steve Kozocowich of ABT called me and requested to know how much of the burner we would like to see shrink wrapped. I advised him that we would want the areas of the burner wrapped that ABT would required to have the burners stored outside. I would image this would be mostly around the front plate of the burner where all of the instruments are to be located.

It would appear that ABT will want to charge us for this wrapping. If they send a quote to me I will make sure that you get a copy. If the price is right it should be implemented as it will give us the option of storing the burners outside, which could be very advantageous. Plus it would provide protection to the vulnerable areas of the burner during shipping and wherever they are staged.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 12/17/2003 12:53:53 PM

>>>

Howard,

I received a message that you called and asked if we can provide shrink wrap on the burner. Which components would you like to see shrink wrapped (knowing this I can obtain a fixed price from our fabricator to apply the shrink wrap accordingly).

Sal

IP7\_028173

**CC:** Gary Goold: James Nelson: ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 1/20/2004 10:13:17 AM  
**Subject:** Shipping Schedule for ABT Burners and Ancillary Equipment

Per Sal Farrar of ABT on 1/20/04 the following is the latest shipping schedule for the burners and ancillary equipment.

1. The Burners will start arriving the week of 1/26/03. There will be 3 truck shipments each week until all 48 burners are on site. There will be 3 to 4 burners on each truck. The last truck is scheduled to leave 2/20/03 and arrive on site around 2/25/04. The ABT Burners will be coming from Passaic County Welders out of New Jersey. Sal has not awarded a shipping contract yet so I can't tell you the trucking company ABT will be shipping the burners with.

Darrell: The Computer model for the burners shows a weight of 6100 lbs. ABT nor the trucking company will be weighing the burners so their will be no official weight. However, IPSC has a calibrated scale and if you want we can get a true weight of the burners if you are interested. Let men know and I will make arrangements with Operations to have a burner weighed.

The first truck could be escorted to the scales upon arriving and leaving to get a gross and net weight of the truck and thus a weight of the burners.

2. The horizontal and vertical castings for the burner elbows will be arriving the week of 2/9/04. The castings will be coming from JMS Fabricating System out of Lathrup, Pennsylvania. JMS will also be sending a ceramic kit for fitting the vertical castings into the coal elbows. The kit will include diamond saws for cutting the ceramic. All castings and repair kits should be coming on one truck.

Darrell: Sal is sending drawings by snail mail that show the placement of the vertical castings. The drawings are being sent to Phil Hailes.

3. The 48 ABB Flame Scanners will be coming in the week of 2/09/04 on one truck. ABB is out of Massachusetts.

Darrell: Jerry Finlinson of IPSC will handle the unloading arrangements for these flame scanners. Contact Jerry should they come to you

4. Purge panels from Air Monitor will be arriving on site the week of 2/09/04 all 8 should be in one truck. Air Monitor is out of Santa Rosa, California.

Darrell: Jerry Finlinson of IPSC will handle the unloading arrangements for these purge panels. Contact Jerry should they come to you.

5. Thermocouples for all 48 burners will be arriving the week of 02/09/04. They will be coming from TTE located in Pennsylvania.

Darrell: No thermocouples were installed on the burners. TEI will need to install these thermocouples per drawings and direction of Jerry Finlinson.

**CC:** James Nelson; Jerry Finlinson; Phil Hailes; sal@advancedburner.com;

**IP7\_028175**



ssteede@teiservices.com: Van Stewart

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 2/18/2004 10:25:45 AM  
**Subject:** Shipping Status (02-18-04) Delay of 12th shipment

1. Load 10 should arrive around 10:30 AM today. The trucker called from I 70 / I 15 intersection asking for direction around 8:30 AM.

2. Load 11 arrived yesterday.

3. Load 12 has had a major engine breakdown. Trucker Maxine Crackle called Pacer Truck Dispatching this morning and advised that she was in Pennsylvania and has blown a hole in her engine. Brad advises that Pacer is sending a truck over to Pennsylvania to pick up the trailer and complete the journey to IPSC. Brad will keep me posted as the situation develops, but presently he figures that the 12th and final load of burners will not arrive until Tuesday, February 24th.

The 12th load is carrying the balance of replacement hoops (36) besides that final 4 burners.

**CC:** James Nelson; Phil Hailes; sal@advancedburner.com;  
ssteede@teiservices.com; Tarkel Larson; truckdispatch@aol.com

**IP7\_028177**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 2/12/2004 12:31:15 PM  
**Subject:** Shipping Status for ABT Burners

1. Load 9 is in Eastern Kansas, trucker figures to be on site Monday Morning 02/16/04.
2. Load 10 will be picked up at Passaic County Welders this afternoon, trucker (Alfred Jimenez) figures to be at IPSC on Monday.
3. Load 11 is scheduled to be picked up at Passaic County Welders on Tuesday.
4. Load 12 is scheduled to be picked up at Passaic County Welders on Tuesday.

Sal Farrara of ABT advises that the 48 L2"x3"x1/4" hoops will arrive on the truck bringing in the 12th load of burners.

Sal also stated the VFD and HFD have an eta of 2/23/04.

**CC:** James Nelson; Jerry Finlinson; Phil Hailes; sal@advancedburner.com; ssteede@teiservices.com; terkel@advancedburner.com; truckdispatch@aol.com

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 2/3/2004 4:39:37 PM  
**Subject:** Shipping Status of ABT Burners

1 First Shipment - Received CW 1, 2, 3 and 4 1/30/04

Note: All-thread rod to damper drive on CW 4 and CW 3 were bent. ABT is sending out a replacement rod and installation instructions, and an assembly drawing of the damper drive. Sal advised that the instruction essentially boil down to two issue one the frame for supporting the all-thread rod is not bent and two the all-thread rod is not warped. The instructions and drawings should be on site next week.

There was also a bent data plated on CW4 and bent shipping lugs on CW2, CW 3 and CW 4. However, this damage was minor and will not have to be repaired.

Attention Darrell: Can you give me a cost for replacing this rod or do you want to wait until the drawing and instructions arrive on site.

2. Second Shipment - Received CW 5, 6, 7 and 8. 2/02/04

Note: There was a bent shipping lug on CW 7. However, this damage was minor and will not have to be repaired. CW 7 also had a bent air flow tube. I believe this can be bent back into position without a problem.

Attention Sal: I have included a picture of the damage for your review and comment.

3. Third Shipment - Received CW 9, 10, 11 and 12. 2/02/04

4. Fourth Shipment - Received CW 13, 14, 15 and 16. 1/30/04

There was a bent shipping lug on CW16. However, this damage was minor and will not have to be repaired

5. Fifth Shipment - Was picked up at Passaic County Welder 6 PM Eastern Time on Monday (2/02/04). The driver will not report in until tomorrow morning. I will let you know where he is in the morning.

6. Sixth Shipment - Passaic County Welders released the four burners for this shipment today. Pacer will not have a truck available to pick it up until tomorrow sometime.

7. Seventh Shipment - Passaic County Welders advised Pacer that the four burners for this shipment will be ready on Thursday. Pacer has a trucker scheduled to pick up the load on Friday Morning.

Note: Sal Ferrara advise me today that Passaic County Welders jigged up to fabricate all CW burner first and upon completion of CW burners they jig up to make CCW burners. Thus, the seventh load by default will have CCW Burners.

**IP7\_028179**

CC: James Nelson; Jerry Finlinson; Phil Haile <Richard.Schmittsal@advancedburner.com>; ssteede@teiservices.com; truckdispatch@aol.com

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 1/26/2004 10:15:51 AM  
**Subject:** Shipping Status on Burners

Contacted the Dispatcher for Pacer Transport and was advised of the following:

1. The first shipment of 4 burners is presently located in Central Illinois.

Note: Trucker passed his blood test, but ran into inclement weather on Sunday that slowed his progress.

2. The dispatcher will talk to the trucker latter today, but he figures the first shipment will most probably arrive on site Wednesday (01/28/04) morning.

3. Passaic County Welders has notified Pacer this morning that they have a second load of 4 burners to ship.

4. Pacer is in the process of getting a truck to pick up the second shipment of burners, but inclement weather on the east coast has Pacer having a hard time getting a free truck that is not snowed in.

5. Pacer will have a better handle on when they will be picking up the second load latter in the day.

**CC:** James Nelson; Jon Finlinson; Phil Hailes; ssteede@teiservices.com

**IP7\_028181**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 2/17/2004 5:05:17 PM  
**Subject:** Shipping Status

1. Load 10 is in New Mexico as of this afternoon. The trucker figures to be on site sometime on Wednesday (02/18/05)

2. Load 12 was picked up this afternoon. The truck driver Maxine figures to arrive on site Friday sometime. This truck has the balance of the 36 angle replacement rings.

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 2/6/2004 4:12:43 PM  
**Subject:** Shipping Status 02/06/04

1. Truck 5 has hit bad weather in Des Moines, Iowa and Omaha Nebraska. The trucker Charles Barnett estimates he will not be in until Monday morning.
2. Truck 6 picked up his four burners on Wednesday evening. The trucker Jerry Johnson estimates he will be at IPSC on Monday.
3. Truck 7 picked up his four burners on Thursday afternoon, The trucker Bob Burke estimates he will be at IPSC on Tuesday.
4. Truck 8 picked up his four burners on Friday afternoon, The trucker Terry Harris estimates he will be at IPSC on Thursday.
5. The 9th set of 4 burners is set to be release to Pacer by Passaic County Welders on Tuesday.

**CC:** James Nelson; Jerry Finlinson; Phil Hailes; Richard Schmit;  
ssteede@teiservices.com



**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 2/4/2004 1:18:58 PM  
**Subject:** Shipping Update 02/04/04

1. Fifth Load - As of 1300 the truck is in Illinois. Trucker Charles Barnett advises that he will most likely arrive at IPSC Saturday. He will call Friday Morning to confirm with TEL.

2. Sixth Load - Will be picked up this afternoon from Passaic County Welders. Pacer has an eta of Monday (02/09/04).

Note: The sixth load will be carrying the ACME rod replacement for the damper drives that were damaged during shipment.

3. Seventh Load - Passaic County Welders have advised Pacer to pick up the 7th load of burners on Thursday Morning. Pacer is looking to have a trucker there Thursday afternoon or Friday Morning.

Note: This will be the first load of CCW Burners.

4. Eighth Load - Passaic County Welders has advised Pacer to pick up the 8th load on Friday afternoon.

**CC:** James Nelson; Phil Hailes; Richard Schmit; sal@advancedburner.com;  
ssteede@teiservices.com

**IP7\_028184**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 1/27/2004 4:45:57 PM  
**Subject:** Status of Burner Shipping (01-27-04)

1 First Shipment - Trucker (Steve Jackson) called me from Oakley, Kansas at 3:30, which is 630 miles from Delta. Steve advises that he will be at IPSC around noon tomorrow.

2. Second Shipment - Four Burners were picked up at 12:30 PM Eastern Time by Pacer Transport. This truck will have dual drivers and should be at IPSC at on Thursday or Friday.

3. Third Shipment - Four Burners were picked up at 4:20 Eastern Time by Pacer Transport. This truck will have only one driver and is estimated to be at IPSC by Monday.

4. Fourth Shipment - Passaic County Welders estimates they will have four more burners to release to Pacer by Thursday Morning.

**CC:** James Nelson; Phil Hailes, sal@advancedburner.com;  
ssteede@teiservices.com

**IP7\_028185**

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 1/27/2004 9:06:20 AM  
**Subject:** Status of Burner Shipments - 01/27

The first shipment of 4 burners is in Salina Kansas as of 7:00 AM this morning. Salina Kansas is 800 miles from Delta. Trucker figures he will be onsite around noon tomorrow (01/28/04).

The second shipment of 4 burners is still at Passaic County Welders waiting for Pacer to dispatch a truck to pick them up. Pacer's advises that the weather is really bad in their area and they are having a tough time getting a trucker to Passaic County Welders. Brad at Pacer advised that Maryland has declared a state of emergency which means no trucks are allowed to cross the border into the state until the roads are plowed. Pacer has truckers that do not need to go through Maryland to get to New Jersey, but Brad mentioned it to give an idea of the weather problems they are facing.

Note: Passaic, New Jersey to Delta is 2000 miles.

The third shipment of burners is ready to go. Contacted Sal Farrar at ABT and was advised that Passaic County Welders has eight completed burners on their shop floor waiting for Pacer to pick them up.

**CC:** James Nelson; Jerry Finlinson; Jon Finlinson; Phil Hailes;  
sal@advancedburner.com; ssteede@teiservices.com

**IP7\_028186**

**From:** Stan Smith  
**To:** Allan, David; Alley, Valerie; Bahr, Pam; Bishop, Vance; Bloomfield, Wes; Christensen, Jon; Cloward, Kelly; Cowley, Boyd; Dewsnap, Alan; Do, Phong; Duwel, Joe; Finlinson, Jerry; Finlinson, Jon; Finlinson, Pat; Fritzges, John; Goold, Gary; Guichard, Rob; Hahn, Dave; Hailes, Phil; Hamilton, Howard; Hostetler, Jeff; Houston, Richard; Hurd, Dorothy; Jensen, Lee; Judkins, Gary; Kelsey, Jim; Kent, Bret; Knapp, Jim; Knapp, Teresa; Lebbon, Ken; Little, Bill; Loukinas, Hugh; Lovell, Sylvan; Lovell, Will; Miller, Kevin; Mincer, Norman; Morgan, Bill; Morris, Bob; Ogden, Sid; Payne, Jeff; Riding, Van; Schena, Jeff; Schmit, Richard; Scott, Howard; Spencer, Christina; Stumph, Craig; Tanner, Lee; Taylor, Ron; Utley, Randy  
**Date:** 1/27/2004 10:24:10 AM  
**Subject:** Supplemental Maintenance Coordinator

For your information, Gary Judkins will be the Contract Coordinator for AP&F (Supplemental Maintenance Contract), and any of their subs, during the upcoming Unit 2 Outage.

Christina Spencer will be assisting him with detailed cost, manpower and material records.

Gary will need to be working with the Area Coordinators also, in the areas that AP&F or their subcontractors will be used. Please give him your cooperation.

Thanks.

**CC:** Alley, Mike; Hurd, Dale; Nelson, James

**From:** Howard Hamilton  
**To:** Howard Scott  
**Date:** 2/9/2004 2:38:43 PM  
**Subject:** I&C Assistance after fires go out in Unit 2

The attached procedures and marked P&ID's were put together by Operations to drain the fuel oil out of the burner front lines during the Unit 2 Outage.

Operations will need and I&C Technician to force open 32 ABV valves on the burner front and one ABV valve at the outlet of the fuel oil pump. Bruce advises that Operations will want to drain the fuel oil out of the burner from lines immediately after the fire are out in the boiler. Bruce estimates that this will occur sometime between midnight and 3 AM, Saturday Morning 02/28/03. Bruce figures that draining the burner fronts will take 4 to 5 hours.

I will write a work request to Jim Knapp and sent you the work request number by email.

**CC:** Bruce McCann; James Nelson; Jim Knapp; John Fritzges; Phil Hailes;  
ssteede@teiservices.com

**IP7\_028188**

**From:** Howard Hamilton  
**To:** Howard Scott; Jim Knapp; John Fritzges  
**Date:** 2/9/2004 3:25:22 PM  
**Subject:** Fwd: I&C Assistance after fires go out in Unit 2

WOR #103186 written to for I&C time described below.

>>> Howard Hamilton 2/9/2004 2:38:43 PM >>>

The attached procedures and marked P&ID's were put together by Operations to drain the fuel oil out of the burner front lines during the Unit 2 Outage.

Operations will need an I&C Technician to force open 32 ABV valves on the burner fronts and one ABV valve at the outlet of the fuel oil pump. Bruce advises that Operations will want to drain the fuel oil out of the burner front lines immediately after the fire is out in the boiler. Bruce estimates that this will occur sometime between midnight and 3 AM, Saturday Morning 02/28/03. Bruce figures that draining the burner fronts will take 4 to 5 hours.

I will write a work request to Jim Knapp and send you the work request number by email.

**CC:** Bruce McCann

**IP7\_028189**

**From:** Howard Hamilton  
**To:** Joe Duwel; Ken Lebbon; ssteede@teiservices.com  
**Date:** 1/26/2004 9:18:05 AM  
**Subject:** Special Tasks and Clearances for Burners During Unit 2 Outage

For the past 3 weeks I have been talking with Boyd Cowley and Lloyd Leavitt concerning removal and replacement of 48 burners during the Unit 2 Outage. During our conversations I have been made aware that this work will require special tasks and clearances that are unusual to a typical unit outage.

**The following is a list of special considerations that have come up during our conversations:**

1. Fuel oil needs to be drained out of the burner fuel oil lines feeding the 48 burners.
2. Coal valves attached to the inlet of the burner elbows will be removed.
3. Plates are being installed over the coal pipe exposed when the coal valves are removed. This is to protect IPSC Maintenance personnel working on the pulverizers and to keep debris out of the coal pipes.
4. Because the coal valves are being removed the tagging boundary is being changed from the coal valves to the cover plates called out in item 3.
5. The burner atomizing air lines and the burner purge airlines are being removed to all 48 burners.
6. The control air tubing is being removed from all 48 burner lighters.
7. Coal elbow flange bolts are to be loosened and lagging immediately around the elbows is to be removed as soon as the fire in the boiler is out.
8. Electrical wire and conduits to the burner thermocouples, burner oil lighters, burner flame scanners, and burner temperature switches will need to be removed.
9. All of the systems that will allow the above need to be clearanced by 700 Saturday, February 28, 2004.

Boyd Cowley advises that Ken Lebbon's Crew 1 will be on duty from 1900 Friday, February 27th to 700 Saturday, February 28th.

Joe Dowell's Crew #4 will be on duty from 700 to 1900 Saturday, February 28th. Any loose ends from Saturday nights shift will need to be completed on Saturdays' day shift.

TEI will have a small crew of about 6 to 10 people out from 1830 Friday, February 27th to 630 Saturday, February 28th.

**I talked with Jon Finlinson on Friday, January 23. The following is what we discussed and an outline of what needs to happen during Saturday's night shift on February 28th.**

**I.) Lloyd Leavitt came up with the following three procedures for draining the fuel oil from the burner lines:**

Procedure 1: Calls for using the fuel oil purge air system to push the fuel oil in the fuel oil lines back to the fuel oil tanks by forcing open valve 2FOBHOI-ABV-22 and pushing the fuel oil back to the fuel oil tanks through the fuel oil supply recirculation line.

Procedure 2: Same as Procedure 1 except it is assumed that an I&C Technician is not available to force open valve 2FOBHOI-ABV-22. To deal with this problem a 1" diameter hose with Chicago fittings will be used to connect drain valves before and after 2FOBHOI-ABV-22 so that it can be by passed.

The draw back is the restriction of a 1" hose by-pass that will take a considerably longer time to drain the burner line fuel oil than procedure 1.

Procedure 3: Is that Same as procedure 1 except that the unmarked drain just after 2FOBHOI-ABV-22 will be used to connect a 1" diameter rubber hose and drain the fuel oil directly into a 55 gallon drum. This procedure will need to be implemented if the fuel oil will not drain back to the fuel oil tanks by way of the fuel oil supply recirculation line.

The draw back to this procedure is that it is even more time consuming than procedure 2 because draining fuel oil into a 55 gallon drum will require a considerable expenditure of effort as compared to simply letting gravity do the work.

Note: Lloyd feels that the best way to drain the fuel oil lines is to start at the top of the 8th floor and work in sequence down to the bottom or 5th floor. Lloyd states that this precaution will keep oil from the upper burners from draining into the lower burners.

Note: Lloyd also states that it is important to have valve 2FOBHOI-ABV-22 open prior to applying purge air. This will allow the long fuel oil drop legs from the burners to the fuel oil supply pumps to drain back to the fuel oil supply tanks through the fuel oil supply recirculation line. Drainage of the fuel oil out of the drop legs will make room for the fuel oil that is left at each of the burner elevations.

Note: Attached to this email find procedures 1, 2 and 3 that Lloyd wrote and PD&I Drawings 2SGE-M2067 and 2FOB-M2049 that Lloyd marked for draining of the burner fuel oil lines.

**II.)** TEI needs to be able to start disassembly of the burner fuel oil lines, burner fuel oil purge airlines and burner fuel oil atomizing airlines feeding the 48 burners by 700 on Saturday morning, February 28th. Removing these lines will allow removal and replacement of the existing burners. Because of the amount of piping that needs to be disassembled TEI will need to begin disassembly early in the outage.

Jon Finlinson advised that he will have Operations draining the fuel oil lines as discussed above as soon as the fire is out of the boiler. Jon estimates that draining of the fuel lines should start sometime just past midnight on February 28th. He also states that the igniter fuel oil system 2SGE will be tagged by 700 Saturday, February 28th.

TEI cannot start disassembly of the burner fuel oil lines, burner fuel oil purge airlines and burner fuel oil atomizing airlines until the following has occurred.

- A.) Operations has drained fuel oil from the burner fuel oil lines at each of the burner elevations.
- B.) Operations has the igniter fuel oil system (2SGE) tagged and the clearance is available.
- C.) Howard has signed off onto the clearance and obtained a group tag out sheet and work card.



D.) TEI has signed onto the group tag out sheet

**III.)** TEI needs to start pulling burner elbows and coal valves on all 48 burners at 700 Saturday, February 28. This is critical to the installation of boiler scaffolding and Maintenance's access to the pulverizers

Jon Finlinson advises that Operations is shooting to have the fireside clearance available by 700, Saturday February 28th.

TEI cannot start pulling burner elbows and coal valves until the following has occurred.

A.) Operation has hung the fireside clearance and the clearance is available.

B.) Howard has signed onto the clearance and obtained a group tag out sheet and work card.

C.) TEI has signed onto the group tag out sheet.

Note: TEI will place a square steel plate over the top of the coal piping that was flanged to the inlet of the coal valve upon pulling a coal valve.

Note: Per Jon Finlinson the plate noted above will become the boundary for the pulverizers. TEI will place a hole in the plate so that Operations can tag the plate with a DNO.

Note: TEI will need to notify Operations prior to reinstalling the coal valves so that the DNO tag on the plate can be removed. As soon as the valve is installed and the coal valve is closed TEI is to contact Operations so that a DNO can be placed on the coal valve.

Note: Per my conversation with Jon Finlinson on 01/23/04 neither TEI nor I need to be signed onto the pulverizer clearances. The boundary DNO described above is for the protection of Maintenance. The fireside clearance has the primary air fans which TEI and I will be signed onto. Without the primary air fans there can't be any coal supplied to the burners.

Note: Maintenance can be signed onto any of the eight pulverizer clearances. Thus, to move the boundary from the plate to the coal stop valve will required that all those signed onto a given pulverizer clearance will need to sign off the clearance. As TEI has 48 burners to reinstall and there are 8 pulverizer clearances this has the potential to be a real bottleneck. Request that Operations look into this problem and see if something can be done to relieve this bottleneck.

**IV.)** TEI needs to be able to loosen the bolts in the burner elbow flanges and remove lagging from immediately around the burner elbow. This will give TEI a needed jump on removing the elbows when the fire side clearance becomes available at 700 on 2/28/04.

TEI cannot loosen bolts on or remove lagging from around the coal elbows until the following has occurred.

A.) Operations has written an OK-TO clearance to loosen bolts on the coal elbows and remove lagging from around the immediate burner elbow.

B.) Howard has signed onto the OK-TO Clearance and been issued a work card along with a group tag out sheet.

C.) TEI has signed onto the group tag out sheet.

Note: the CO may or may not require a group tag out sheet. Since no tags will need to be hung a work card maybe all that is required

Jon Finlinson advises this work can begin as soon as the fire is out of the boiler.

V.) TEI needs to be able to begin removing copper tubing supplying the control air to the fuel oil lighters at 700 on February 28th. Until this tubing is removed the burner lighters cannot be removed, the burners pulled, the lagging removed or the tubing trays moved.

TEI cannot begin taking the control air tubing apart until the following has happened.

A.) Operations has hung the control air system and the clearance is available.

B.) Howard has signed onto the clearance and obtained a group tag out sheet and work card.

C.) TEI has signed onto the group tag out sheet.

Jon Finlinson advises that Operations is shooting to have the control air clearance available by 700, Saturday February 28th to accomplish this work.

Note: Lloyd Leavitt states that the control air feeding the burner igniters can be found on P&ID drawing 2CAB-M2016A.

VI. The seal air piping that supplies air to the burner flame scanners will be tagged out with the fireside clearance. Seal air is provided by the primary air fans (reference P&ID 2SGA-20636-7).

TEI will need to remove the flex hose for this piping starting at 700 on 2/28/04.

VII.) Jerry Finlinson is to make manpower arrangements to have the electrical wiring and conduits removed going to the burners. Jerry will also work with Operations concerning the clearances he will need to perform this work.

TEI will need electrical wiring and conduits to the burner thermocouples, burner oil lighters, burner flame scanners and burner temperature switches removed. This will allow TEI to remove the burners and the bulk of the lagging around the burners and hand railing in front of the burners. TEI needs to have the wiring and conduit removed by 700 on Saturday, February 28th.

TEI cannot begin taking the handrail down and removing burners until the following has happened.

A.) Operations has the systems associated with the above electrical work tagged and clearances available.

B.) Jerry Finlinson has signed onto the clearances required for this work.

C.) Jerry Finlinson has removed electrical wiring and conduit to items noted above.

D.) Howard has signed onto the required clearances and obtained a group tag out sheets and work cards.

E. TEI has signed onto the required group tag out sheets.

**CC:** Alan Dewsnap; Boyd Cowley; James Nelson; Jerry Finlinson; Jon Finlinson;  
Lloyd Leavitt; Phil Hailes; Richard Schmit

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/18/2004 1:20:55 PM  
**Subject:** Burner and Pulverizer Clearances

The following two requests are proposed to Operations to facilitate the removal and installation of coal elbows and coal valves. Please review and advise on the implementation of these requests.

**Request I:** It is important that no one be allowed on the pulverizer clearances from 700 Saturday, February 28th to 700 Monday, March 1.

**Reason:** TEI will be removing 48 coal elbows and 48 coal valves and placing a steel plate on the coal piping that will become the boundary for the pulverizers. Getting personnel off the pulverizer clearances could be difficult and interfere with burner replacement work. Clearances for the pulverizers will require the coal valves to be the boundary point prior to TEI removing the coal valves and placing the steel plates on the coal piping. Before TEI could remove the coal valves, clearances for the pulverizer would have to be turned in.

**Comments:** Having talked with Operations and Maintenance, please note the following:

1. I&C is looking at running tests on the coal feeders during Saturday, February 28th and Sunday February 29th. If I&C is granted their request this will mean no one can be in the pulverizers. Thus no one can be on the pulverizer clearances.
2. Maintenance is presently planning not to begin work on the pulverizers until Monday 700, March 1, which should eliminate the need for activating the pulverizers clearances until Maintenance begins work on Monday.
3. Should there be a pressing need to allow someone on the pulverizer clearances they could be accommodated with the following limitation. TEI will be starting on the 5th floor and working up to the 8th floor to stay ahead of Safeway who is placing the boiler scaffolding through the front wall burners. As the burner rows become available ( B & G, F & C, A & H and E and D) the corresponding pulverizer clearance can be released once Operations has tagged the steel plate on the coal piping.

**Request II:** Prior to TEI installing the coal stop valves it will be necessary that no one be signed onto the pulverizer clearances.

**Reason:** TEI will be installing coal valves for 48 burners. To install the coal valves the boundary plates will need to be removed. Before this can be done everyone on a pulverizer clearance will need to be signed off. To keep from impacting TEI and the completion of the outage it would be best to have everyone off the pulverizer clearances at the start of the coal valve installation.

**Comments:** Having discussed with Operations, Maintenance and TEI please note the following:

1. TEI can place the coal valves back in any order. Thus, pulverizers with a higher priority can have their corresponding burner rows addressed first, the DNO tags hung on the coal valves and pulverizer clearances established for the corresponding pulverizer.
2. Pulverizers F, A and B have recently been overhauled and should only required minor

work that can be taken care of at the beginning of the outage. Thus, the 5th, 6th and 7th burner rows on the front wall should not have anyone on a clearance by this time in the outage.

3. TEI's schedule calls for the coal valves to be replaced during a 3 day period March 18th, March 19th and March 20th. These dates may change but the duration will remain the same. Operations to be notified a minimum of 24 hours and probably 48 hours in advance of when TEI will begin installing coal valves.

4. Maintenance is tentatively planning to work on the pulverizer during the day shift only and 6 days per week. Getting Maintenance to sign off on a clearance during a night shift or on Sunday will be a problem.

CC: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/18/2004 4:20:10 PM  
**Subject:** Clearances for Burner Work

Hugh give this to Isely for his information:

I talked to Bruce McCann on Tuesday and was advised of the following:

1. Bruce will be placing the swing valves on the Pulverizer on a separate clearance.
2. There will be 3 tags on each Pulverizer. One tag for the solenoids that controls the air to the swing valves and two on the key switches located next to the control room.
3. The Pulverizer swing valve cleared will be used to accomplish the following:
  - A. Provide a means early Saturday Morning (2/28/04) to isolate the coal elbows and coal valves from the Primary Air Fans to allow TEI to remove same once the fire is out of the boiler.

TEI is aware that Operations will have the FD and ID Fans running full tilt to cool down the boiler and that there could be a good air flow through the burners from the negative pressure developed.

B. This same tagging will allow the elbows and coal valves to be reinstalled without having to use the coal valves as a boundary or the cover plates that will be installed on top of the coal piping once the coal valves have been removed. This will avoid having to get everyone to sign off or sign on to a clearance every time a valve is installed.

C. This clearance will allow release of burner rows as they become available simply by going down to the control room and notifying the CO which burners are installed.

The idea is to have you sign onto this clearance on Saturday Night and I will sign onto the clearance on Saturday Day. No group sheets will be required as the Fire side and the special Burner clearance will protect anyone from TEI that is working on the burners. This is a special clearance to release the swing valves to Maintenance without getting into the hassle of using the coal valves as the pulverize boundary.

E. As a row of burners becomes available you and I will need to sign off on this clearance. Operations will then change the status of the pulverizers and we will need to sign back onto the clearance with the released mills off the clearance.

4. Bruce is coming in special on Wednesday morning (2/25/04) around 9:00 AM to go over the clearances. The clearances should be available at this time for review.

5. Bruce will be sending me an email explaining what clearance we will need to work on the burners.

6. Bruce is setting up a special clearance to cover the electrical, seal air, instrument air, purge and atomizing air that effect the burner work. The fuel oil will be on the fire side.

Note: TEI will start the night shift for the outage Friday at 6:30 PM. You need to start with them and sign off on the Pulverizer swing valve clearance right after the fires are out in the boiler.

**IP7\_028197**

CC: Bruce McCann, James Nelson, Phil Hailes, ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/6/2004 5:35:28 PM  
**Subject:** Fwd: I&C Tech for Burner Clearance Work

Give to Isely

>>>> Howard Hamilton 2/6/2004 5:33:50 PM >>>>

I have been talking with Operations and in particular Bruce McCann concerning the draining of fuel oil from the burner front piping the early morning of Saturday February 28th. After the fire is out in the boiler Operations needs to use the purge air system to flush fuel oil out of the burner front fuel lines.

ABV valves in the fuel lines will need to be forced open on the front and rear burner elevations at the 5th, 6th, 7th and 8th floors. Bruce figures that an I&C technician will be needed to work with an Operator full time from about 2:00 AM on Saturday Morning until all the fuel lines on each of the floors is drained. TEI will start cutting into the lines at 7:00 AM on Saturday Morning in preparation for pulling the old B&W Burners.

Contact Bruce McAnn or I if you have questions.

Thanks,

**IP7\_028199**



**From:** Jerry Finlinson  
**To:** Jim Knapp  
**Date:** 2/7/2004 9:16:51 AM  
**Subject:** Fwd: Outage Burner Front Electrical Clearances

Jim,

Can you get with me the week of Feb 16th to work out clearances for I&C tech's to pull instrumentation wiring from burners the first of the outage in preparation for pulling out the old burners. I think we want to keep the TC JBX's, so we'll need them remounted on the new burners.

Howard, do you know where they want to start? Top, bottom, front, back?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Howard Hamilton 2/6/2004 5:41:16 PM >>>

I talked to Jerry Finlinson today and was advise that he will not be able to talk to you about the burner front clearances until he returns on 2/16/04. He will be out of town all next week.

I told Jerry that you would be back on days on 2/16/04. He will contact you then.

**CC:** Howard Hamilton

**IP7\_028200**

**From:** Howard Hamilton  
**To:** Howard Scott; John Fritzges  
**Date:** 2/6/2004 5:33:50 PM  
**Subject:** I&C Tech for Burner Clearance Work

I have been talking with Operations and in particular Bruce McCann concerning the draining of fuel oil from the burner front piping the early morning of Saturday February 28th. After the fire is out in the boiler Operations needs to use the purge air system to flush fuel oil out of the burner front fuel lines.

ABV valves in the fuel lines will need to be forced open on the front and rear burner elevations at the 5th, 6th, 7th and 8th floors. Bruce figures that an I&C technician will be needed to work with an Operator full time from about 2:00 AM on Saturday Morning until all the fuel lines on each of the floors is drained. TEI will start cutting into the lines at 7:00 AM on Saturday Morning in preparation for pulling the old B&W Burners.

Contact Bruce McAnn or I if you have questions.

Thanks,

**CC:** Bruce McCann; James Nelson; Jerry Finlinson; Phil Hailes;  
ssteede@teiservices.com

**IP7\_028201**

**From:** Howard Hamilton  
**To:** Bruce McCann  
**Date:** 2/6/2004 5:41:16 PM  
**Subject:** Outage Burner Front Electrical Clearances

I talked to Jerry Finlinson today and was advise that he will not be able to talk to you about the burner front clearances until he returns on 2/16/04. He will be out of town all next week.

I told Jerry that you would be back on days on 2/16/04. He will contact you then.

**CC:** James Nelson; Jerry Finlinson; Phil Hailes; sstccde@teiservices.com

**From:** Richard Schmit  
**To:** Bruce McCann; Howard Hamilton, Kelly Cloward  
**Date:** 2/2/2004 7:49:48 AM  
**Subject:** outage-pulverizers

Kelly,  
Howard said he could get all the elbows and isolation valves off over the first weekend, then you could sign on to all the mills first thing Monday morning. Towards the end of the outage Howard will need a few days to get the isolation valves back in. will this work for you?

Bruce-note for tagging to leave the burner isolation valve tags off the clearances until the blind flanges get put on.

Richard F. Schmit  
IPSC Operations

**IP7\_028203**

**From:** Howard Hamilton  
**To:** Phil Hailes  
**Date:** 1/7/2004 5:13:38 PM  
**Subject:** Red Barrier Tape

For Safety Reasons Red Barrier Tape was placed on the 8th and 4th floor of Unit 2, note the following:

1. Larry Byrd, Henry Hancock, Boyd Cowley and myself meet with Boyd this morning to place red barrier tape for the OFA diagonal steel and replacement work over the top of the four secondary air duct connections in Unit 2.
2. The Tag on the tape is in my name and TIE and yourself are listed as authorized to cross the tape barrier.
3. All others will need permission from me to cross this tape.
4. I discussed the placement of the tape with Sylvan Lovell before proceeding.
5. Boyd gave me a copy of the PAI for placement of barrier tape and I gave Henry Hancock a copy for future reference.
6. The nature of the work and exposure to those below the diagonals required placement of the tape.
7. Larry Byrd, Boyd Cowley and myself placed the tape and attached the tags as required.
8. The barrier tape was placed on the east and west side of the boiler on the 8th floor and the 4th floor.
9. This tape was only placed for two of the four diagonals. Larry Byrd will contact the Control Room Operator when he is ready to move the tape.
10. TEI to contact me when the tape the tape can be removed.

**CC:** Boyd Cowley; James Nelson; [ssteede@teiservices.com](mailto:ssteede@teiservices.com); Sylvan Lovell

**From:** Howard Hamilton  
**To:** Kelly Cloward  
**Date:** 2/25/2004 4:50:31 PM  
**Subject:** Release of Coal Pipe Cover Plates for Placement of Tags.

I have talked to TEI about the following:

1. Operations can go ahead and place tags on the coal pipe cover plates for Pulverizers A and H on Monday March 1st. This is the 3rd burner floor level.
2. Presently TEI is leaning to start placing new burners back on the 1st burner floor, Pulverizers B & G. By Wednesday March 3rd TEI should have made up their mind. Once TEI has decided additional pulverizers can be released for tagging of the coal pipe cover plates.
3. TEI is looking to complete their first burner level 10 to 12 days into the outage this would be around March 8th or 10th.
4. Additional burner rows will be completed 3 to 4 days apart once the first level has been released.

**CC:** Boyd Cowley; Bruce McCann; James Nelson; Joe Duwel; Keith Mangrum; Ken Lebbon; Phil Hailes; Richard Schmit; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

**From:** Howard Hamilton  
**To:** Tarkel Larson  
**Date:** 9/1/2004 2:36:24 PM  
**Subject:** Maintenance Enterprise Inc.

Attached is the bid that ABT submitted for MEI for the Unit 2 burner work.

If you need additional information let me know.

**From:** Howard Hamilton  
**To:** James Nelson  
**Date:** 1/20/2004 4:32:08 PM  
**Subject:** TEI Extra Work - Platform for L'O Cabinet

Talking with Nancy Bennett and Ralph Newberry I requested that TEI be issued a Purchase Order for extra work I have written a requisition for (198910).

Nancy advised that she would generate a POA that will become a change order for the burner contract.

I believe that this is what we had talked about doing, if not contact Nancy and let her know otherwise.

**CC:** Nancy Bennett

**IP7\_028207**



**From:** Howard Hamilton  
**To:** ssteede@terservices.com  
**Date:** 1/20/2004 10:23:28 AM  
**Subject:** Extra Work - 4'x8' Platform

George cross has approved Requisition 198910 for the platform addition on the 5th floor.

The only step left is for Planning to Issue TEI a Purchase Order. This should happen today sometime.

**CC:** James Nelson; Phil Finlinson

**IP7\_028208**

**From:** Howard Hamilton  
**To:** Nancy Bennett  
**Date:** 1/21/2004 9:01:11 AM  
**Subject:** Fwd: Re: TEI Extra Work - Platform for L O Cabinet

It appears to me that James is not talking a work release, but a POA.

>>> James Nelson 1/21/2004 7:16:25 AM >>>

That is correct Howard. However, be advised that there is not yet a signed burner contract and probably won't be for several days. So there is no contract to issue a POA against yet.

>>> Howard Hamilton 1/20/2004 4:32:08 PM >>>

Talking with Nancy Bennett and Ralph Newberry I requested that TEI be issued a Purchase Order for extra work I have written a requisition for (198910).

Nancy advised that she would generate a POA that will become a change order for the burner contract.

I believe that this is what we had talked about doing, if not contact Nancy and let her know otherwise.

**IP7\_028209**

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 1/20/2004 10:43:48 AM  
**Subject:** Re: Extra Work - 4'x8' Platform

Why does Sal at ABT have the least interest in our platform on the 5th level? The burners aren't even going through that access.??

>>> Howard Hamilton 1/20/2004 10:25:43 AM >>>

George cross has approved Requisition 198910 for the platform addition on the 5th floor.

The only step left is for Planning to Issue TEI a Purchase Order. This should happen today sometime.

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 1/21/2004 7:16:25 AM  
**Subject:** Re: TEI Extra Work - Platform for I/O Cabinet

That is correct Howard. However, be advised that there is not yet a signed burner contract and probably won't be for several days. So there is no contract to issue a POA against yet.

>>> Howard Hamilton 1/20/2004 4:32:08 PM >>>

Talking with Nancy Bennett and Ralph Newberry I requested that TEI be issued a Purchase Order for extra work I have written a requisition for (198910).

Nancy advised that she would generate a POA that will become a change order for the burner contract.

I believe that this is what we had talked about doing, if not contact Nancy and let her know otherwise.

**IP7\_028211**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 1/15/2004 12:29:09 PM  
**Subject:** TEI Purchase Request dated 01-14-04 (Project 80960)

Please be advised that Work Order 03-96033-05, and Requisition 198910 have been written for staff approval concerning this extra work. Upon approval IPSC Purchasing will issue TEI a Purchase Order.

When you have been issued a PO for this work please contact me with a schedule for same.

**CC:** James Nelson; Nancy Bennett; Phil Hailes

**IP7\_028212**

**From:** <william.m.clark@us.abb.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 2/23/2004 9:48:32 PM  
**Subject:** Re: Flame scanner packing gland installation difficulties

Jerry,

You received the entire assembly which typically connects to a three inch female coupling. Since you have a threaded pipe already installed there can be only a few options. Your picture Scanner Packing Gland2 is the correct orientation. One option would be to modify the existing pipe and drill holes for the positioning bolts and place the gland cap and packing on the existing pipe. The other option would be to cut the pipe back on the burner and re-thread and provide a female coupling. The bolts in the packing gland are need to keep the pipe centered and lock it down the packing gland cap and packing material is required to seal the assembly.

If you need any additional assistance please contact me at the following:

Regards,

William M. Clark  
ABB Inc.  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: william.m.clark@us.abb.com

Message from "Jerry Finlinson" <Jerry-F@ipsc.com> received on 02/23/2004 06:37 PM

02/23/2004 06:37 PM  
Internal

"Jerry Finlinson" <Jerry-F@ipsc.com>

**IP7\_028213**

Sent by "Jerry Finlinson" <Jerry-F@ipsc.com>

To: <sal@advancedburner.com>, Harry  
Dohalick/USINY/ABB@ABB\_US01, James M.  
Clark/USIMS/ABB@ABB\_US01, William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson"  
<JIM-N@ipsc.com>,  
"Jon Christensen" <JON-C@ipsc.com>  
Subject: Flame scanner packing gland installation  
difficulties

FYI,  
I found the flame scanner tube packing glands and tried installing  
one.  
I can't tell which way they are supposed to install. They appear to be  
missing  
a connector or something. If there is a coupler in there then the  
scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

Attention: Attachment "Scanner packing gland2 sm.jpg" has been removed  
from this note on February 23 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Scanner packing gland reversed sm.jpg" has been  
removed from this note on February 23 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)

CC: <harry.dohalick@us.abb.com>, "Howard Hamilton" <howard-h@ipsc.com>,  
<james.m.clark@us.abb.com>, "James Nelson" <JIM-N@ipsc.com>, "Jon Christensen"  
<JON-C@ipsc.com>, <sal@advancedburner.com>

**IP7\_028214**

**From:** Jerry Finlinson  
**To:** Harry Dohaick; James Clark; Sal Ferrara; William m.clark@us.abb.com  
**Date:** 2/23/2004 4:37:27 PM  
**Subject:** Flame scanner packing gland installation difficulties

FYI,

I found the flame scanner tube packing glands and tried installing one. I can't tell which way they are supposed to install. They appear to be missing a connector or something. If there is a coupler in there then the scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; James Nelson; Jon Christensen

**IP7\_028215**



**From:** Heward Hamilton  
**To:** Jerry Finlinson  
**Date:** 2/24/2004 11:26:40 AM  
**Subject:** Modifying ABB Packing Gland

IPSC has requested TEI to modify the packing gland for one burner as follows:

1. Take the cap off the 3" schedule 160 pipe sent in by ABB and place it on the 3" schedule 40 pipe that ABT placed on the burner front for the ABB Scanner.
2. Drill three holes in the 3" schedule 40 pipe and drill and tap the pipe so that the 3/8" positioning bolts supplied with the ABB packing gland can be installed.

Questions:

1. ABB used schedule 160 pipe in their packing gland assembly for a reason. Possibly to provide a thicker wall for the 3/8" alignment bolt to be threaded into.

Will it be okay to drill and tap the thinner wall schedule 40 pipe or will it need to be beefed up?

Will it be necessary to weld 3/8" bolts to the schedule 40 pipe to allow for more torque in the 3/8" alignment bolts?

2. Is it okay to torque down the packing gland material against a schedule 40 pipe?

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com

**IP7\_028216**

**From:** Jerry Finlinson  
**To:** Harry Dohalick; James Clark; [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)  
**Date:** 2/25/2004 4:32:17 PM  
**Subject:** Re: Flame scanner packing gland installation sample

Bill,

We have modified a flame scanner packing gland pipe as shown in the attached photo. Please examine and give your approval. We think we'll change it by moving the positioning bolts farther from the burner, closer to the packing gland, so they won't interfere with insulation. There are about 3.5 threads on the bolt. That should be sufficient. TEI estimates that it will take 30 to 60 minutes per burner to make these modifications.

Give your approval to go ahead like this.  
They'd like to start this work Thursday morning.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/23/2004 9:43:52 PM >>>

Jerry,

You received the entire assembly which typically connects to a three inch female coupling. Since you have a threaded pipe already installed there can be only a few options. Your picture Scanner Packing Gland2 is the correct orientation. One option would be to modify the existing pipe and drill holes for the positioning bolts and place the gland cap and packing on the existing pipe. The other option would be to cut the pipe back on the burner and re-thread and provide a female coupling. The bolts in the packing gland are need to keep the pipe centered and lock it down the packing gland cap and packing material is required to seal the assembly.

If you need any additional assistance please contact me at the following:

Regards,

William M. Clark  
ABB Inc.  
2 Waterside Crossing  
Windsor, CT 06095

**IP7\_028217**

Phone: (860) 285-9402  
Fax: (860) 285-6099  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/23/2004  
06:37 PM

02/23/2004 06:37 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: <[sal@advancedburner.com](mailto:sal@advancedburner.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01, James M.  
Clark/USIMS/ABB@ABB\_US01, William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>,  
"Jon Christensen" <[JON-C@ipsc.com](mailto:JON-C@ipsc.com)>  
Subject: Flame scanner packing gland installation  
difficulties

FYI,  
I found the flame scanner tube packing glands and tried installing  
one.  
I can't tell which way they are supposed to install. They appear to be  
missing  
a connector or something. If there is a coupler in there then the  
scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**IP7\_028218**

Attention: Attachment "Scanner packing gland? sm.jpg" has been removed  
from this note on February 23 2004 by William M. Clark USPOA/ABB  
Attention: Attachment "Scanner packing gland reversed sm.jpg" has been  
removed from this note on February 23 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)

**CC:** Howard Hamilton; James Nelson; Phil Hailes

**From:** Jerry Finlinson  
**To:** arnold.j.piellucci@us.abb.com  
**Date:** 3/2/2004 11:24:39 AM  
**Subject:** Re: ABT/IPSC, ABB proj #10354G01 - half couplings received

Arnold,

We just received 4 boxes of half couplings. I went and opened one box. They are threaded on one end and meant to be welded on the other end. So they won't work for this installation. I guess you are sending some full couplings? What do you want us to do with these half couplings? Should I return them to you? Please provide shipping address info.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <arnold.j.piellucci@us.abb.com> 3/1/2004 11:29:13 AM >>>

Good afternoon Jerry! I have done some further research on the half coupling and found that your assessment is correct. The half couplings will not satisfy the installation requirements. A half coupling is threaded only half way through.

I will revise the order and obtain full couplings. As soon as I have a delivery date, I will advise you. I apologize for any inconvenience that this may cause you!

AP

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 03/01/2004 12:18 PM

03/01/2004 "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>  
12:18 PM  
Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

**To:** Arnold J. Piellucci/USPOA/ABB@ABB\_US01  
**cc:**  
**Subject:** Re: ABT/IPSC, ABB proj #10354G01 - couplings

**IP7\_028220**

Arnold.

It depends what a half coupling is. We were told a half coupling was a cap with a hole on one end like your packing gland caps.

Do you mean it has threads on both ends and is only half as thick, then that's fine.

Please describe what you mean by half coupling.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[arnold.j.piellucci@us.abb.com](mailto:arnold.j.piellucci@us.abb.com)> 3/1/2004 8:28:27 AM >>>

Good morning Jerry! Jim Clark forwarded Howard Hamilton's comment regarding the couplings to me. We ordered half couplings based on previous unit experience. The half couplings have been of sufficient strength to allow tight installation and support of the scanner / guidepipe combination.

Is there a specific reason for requesting full couplings rather than half couplings?

AP

**CC:** Howard Hamilton; James Nelson

**IP7\_028221**

**From:** Jerry Finlinson  
**To:** James Nelson; Jon Christensen  
**Date:** 3/3/2004 12:50:18 PM  
**Subject:** Fwd: RE: ABT Intermountain Burner Tubing Cost (AMC WO NO 50633)

We need to evaluate this offer and see if it's reasonable to us.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Andy Chew <achew@airmonitor.com> 3/3/2004 12:38:08 PM >>>  
Jerry,

Air Monitor agrees to provide IPSC with a \$6,000 credit in lieu of providing the tubing and fittings for the signal connections from the burner fronts to the transmitter/purge cabinets as per AMC proposal number 102403-1.1 dated 10-24-2003 for Air Monitor work order number 50633 and ABT PO A03-008-413. This \$6,000 credit can be used for future wind tunnel performance testing in Air Monitor's test facility in Santa Rosa, CA

I will reiterate that we think copper tubing is a better choice for use with our equipment than carbon steel pipe for reasons previously stated.

Thank you.

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

-----Original Message-----

**From:** Andy Chew  
**Sent:** Monday, March 01, 2004 1:22 PM  
**To:** 'Jerry Finlinson'  
**Subject:** RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Jerry:

AMC is generally OK with using CS pipe for signal lines contingent upon:

1. Threaded connections are minimized and wherever possible connections are to be welded.
2. Something other than carbon steel unions or pipe couplings be used as the signal line 'break' fitting. With time and vibration these are prone to

**IP7\_028222**

leakage. We were just involved with utility in diagnosing and fixing this problem

3 The plant air used for purge is dry. If it has moisture eventually scale/rust will occur inside the pipe. That scale/rust can flake off and eventually end up plugging the sensing holes from the inside.

If you were choosing to use copper, which is what we recommend after SST tubing, is doing each signal line with a MPT x sweat fitting at the burner wall and flex hose connection, copper tube with sweat straight connectors or elbows to connect the sections, a copper sweat union near the AMC enclosure and another MPT x sweat fitting to connect to the enclosure. Nice thing about copper is that if there is ever a need to remove part of the signal line the repair is quite easy with a few straight connectors.

Again, I will be getting back to you on what it would have cost us in material to make these connections.

Regards,

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Monday, March 01, 2004 9:26 AM

To: Andy Chew

Subject: RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Andy,

Thanks for checking into that.

As it turns out, my boss doesn't want me to use tubing because our plant standard is to use welded carbon steel piping in this application. So we've already got that steel piping on order. Let's work out a reasonable credit with you for how much the tubing would have cost. If it was copper it would have been around \$6000 and if it was stainless it would have been \$12K to \$15K. I do believe the spec said stainless, didn't it?

Anyway, let's work up a mutually agreeable credit for that and we'll apply it towards some additional windtunnel testing after we know where our burners are set or decrease the price a bit.

Thanks,  
Jerry

**IP7\_028223**



Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/27/2004 9:52:47 AM >>>  
Jerry,

I will have quotes from our copper tubing/fitting vendors soon to compare.  
A couple of things:

All of the signal connections on the cabinets, burner fronts and flex connections are either 1/2" male or 1/2" female pipe. Why are the fittings quoted 3/4" MNPT? I think they should be both 1/2" MNPT x 3/4" tube sweat and 1/2" FNPT x 3/4" tube sweat. You will eliminate the need to provide more fittings to reduce from 3/4" to 1/2" threaded pipe connections.

I reviewed the proposal and it indicates AMC will supply "tubing, fittings, expansion joints/flex connections" but there is no mention of tube trays or supports. I asked our sales group about this and they confirmed trays/supports are not our scope.

Thank you.

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Friday, February 27, 2004 6:58 AM  
To: Andy Chew  
Subject: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Andy,

We got a quote together from our TEI contractor.  
They are recommending that we go with soft copper tubing

3/4" soft copper tubing 6100 ft x .76/ft = \$4636  
3/4" M NPT x 3/4" tube fitting 192 x \$8 = 1536  
3/4 brass tube coupling 300 x \$9 = \$2700  
6" tube tray 1120 ft x \$6/ft = \$6720

Total material cost = \$15592

installation = \$54,141 We'll be covering this cost, but it seems very high.

**IP7\_028224**

They also provided an estimate for hard copper tubing which was \$15686 for pipe and fittings.  
but are recommending us to go with the soft copper.

Let us know if this seems reasonable to you.  
Should we go ahead and order the tubing and fittings or do you want to provide them and get them here by the end of next week?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/24/2004 10:11:04 AM >>>  
Jerry,

Any word on the tubing cost?

Thanks.

Andy

-----Original Message-----

From: Andy Chew  
Sent: Friday, February 20, 2004 1:46 PM  
To: 'Jerry Finlinson'  
Subject: RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

Jerry,

Yes, please get a written quote and advise. I think we should stick with the 3/4" copper tube in straight-rigid plumbing grade for use with soldered (sweat) joint connections for all the runs both short and long. It will be simpler and cleaner that way.

Let me know.

Thanks.

Andy

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Friday, February 20, 2004 1:21 PM  
To: Andy Chew  
Subject: RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

IP7\_028225

**From:** Howard Hamilton  
**To:** sal@advancedburner.com  
**Date:** 5/4/2004 9:10:19 AM  
**Subject:** Turning Vane Details

I have not heard back from you concerning a schedule to have the detail drawings for the turning vanes, division walls and straightening plates for the secondary air duct and the windboxes.

When do you plan to release these drawings?

**CC:** James Nelson; Phil Hailes

**IP7\_028226**

**From:** Howard Hamilton  
**To:** Jackscott@msn.com  
**Date:** 5/4/2004 8:35:12 AM  
**Subject:** Budgetary Estimate Unit 1 Turning Vanes

Received your budgetary estimate of \$492,444.00 for installing turning vanes in the Secondary Air Duct and Windboxes for Unit 1.

Request that the \$492,000 be broken down into the following areas. IPSC many not want to install turning vanes in certain areas.

1. Vanes and Division wall in the air heater region as called out on Page 1 of 2 of the January 28th, 2004 Air Flow Sciences Corporation Letter and Figure 1 attached to this letter. Estimate to include east and west air heaters in Unit 1.

Budgetary Estimate: \$\_\_\_\_\_.

2. Large vanes and division wall near wind boxes as called out on Page 2 of 2 of the January 28th, 2004 Air Flow Sciences Corporation Letter and Figure 5 attached to this letter. Estimate to include east and west windboxes in Unit 1.

Budgetary Estimate: \$\_\_\_\_\_.

3. Small vanes and straightening grid at inlet to windboxes as called out on Page 2 of 2 of the January 28th, 2004 Air Flow Sciences Corporation Letter and Figure 9 attached to this letter. Estimate to include east and west windboxes in Unit 1.

Budgetary Estimate: \$\_\_\_\_\_.

**CC:** James Nelson; Phil Hailes

**IP7\_028227**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 4/14/2004 12:45:30 PM  
**Subject:** Cost Estimate for Unit 1 Secondary Air Duct Turning Vanes

Darrell, provide an estimate to fabricate and install turning vanes located in the secondary air duct. Estimate to be used for budgeting money for the 2005 spring outage. IPSC is also planning to install the baffles in the 8 windboxes as was done in this years outage. We have material and labor charge to reference for the baffles.

Note the following:

1. Attached find four marked 11"x17" B&W secondary air drawings. The drawings were marked to show the turning vanes in sectional and plan views. There is also a detail drawing showing section W-W which is the pipe brace that passes thru tuning vane MK #2.
2. Attached find four 11"x17" ABT Drawings for turning vanes MK #1, MK #2, MK #3 and MK #4.
3. Attached find seven B&V plant arrangement drawings 11" x 17" showing plan views of all four burner elevations, the operations and 4th floor. A section view of the burner are has also been included.
4. Attached find eighteen ABT 8-1/2" x 11-1/2" drawings showing the shop details of the turning vanes and the plate support brackets.
5. The tuning vane plates need to be bent off site by a fabricator. TEI should not depend on having IPSC's plate bender available.
6. Turning vanes MK #6 and MK #5 call for a new dividing wall to support one end of the turning vanes. ABT has not designed the dividing wall yet and probably will not for another 2 months. I would imagine that it is probably a 1/4" plate running the full depth of the turning vane with 4" or 5" channel used as stiffeners. Take a conservative WAG at this dividing wall as IPSC needs to have and estimate by early next week.
7. I have talked to several steel suppliers and they advise me that they figure steel to be up 30% to 50% by the end of the year. Be sure to pad you material estimate accordingly.
8. All of the above documents and this cover letter were FedExed to you on Wednesday, April 14

**CC:** James Nelson; Phil Hailes

**IP7\_028228**

**From:** Howard Hamilton  
**To:** Jackscott@msn.com  
**Date:** 5/12/2004 7:37:30 AM  
**Subject:** Estimate Breakdown

We have yet to receive a breakdown of the estimate into the three areas requested for the Unit 1 Turning vanes.

When do you expect to forward this breakdown?

**CC:** James Nelson; Phil Hailes

**From:** "Sal Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 5/4/2004 12:01:24 PM  
**Subject:** RE: Turning Vane Details

Howard,  
We are planning to have these details complete by June 1, 2004. I'll let you know if there is any change in this schedule.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, May 04, 2004 11:10 AM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes  
Subject: Turning Vane Details

I have not heard back from you concerning a schedule to have the detail drawings for the turning vanes, division walls and straightening plates for the secondary air duct and the windboxes.

When do you plan to release these drawings?

---

This message scanned for viruses by CoreComm

**CC:** "Alan Paschedag" <alan@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>

IP7\_028230

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 4/19/2004 10:41:28 AM  
**Subject:** Secondary Air Duct Turning Vanes and division walls.

Darrell:

I was advised by Sal Ferrara today there are many more turning vanes required in the Secondary Air Duct than the eight I sent to you last week.

Sal sent me a schematic of all of the turning vanes and division walls recommended by Air Flow Science Corporation.

I sent out the 14 page report from Air Flow Science today along with the three B&W drawings showing the duct work over the air heaters by FedEx.

Let me know if you have enough information to make a budgetary estimate IPSC can use for the turning vanes and division walls for the Spring Outage. ABT is looking to have details for the turning vanes, division walls and supports by 6/1/04. Jim needs a rough estimate for budgeting by early next week. If we need to fine tune the estimate we will send you the ABT drawings as soon as we receive them.

Request that the estimate be broken down into the following three areas. IPSC may want to forgo or postpone some of these.

1. The turning vanes and division walls for the air heaters see Figures 1 thru 4.
2. The turning vanes and division walls down stream of the air foils see figures 5 thru 8. I sent you drawings last week for this work. However the division wall was not shown in the details.
3. The turning vanes and straightening plates at the inlet of each of the windbox levels see figures 9 thru 14.

**CC:** James Nelson; Phil Hailes

**IP7\_028231**



**From:** James Nelson  
**To:** Howard Hamilton; Salvatore Ferrara  
**Date:** 2/20/2004 10:17:24 AM  
**Subject:** RE: Donut for Lighters

This may explain the ignitor hole size but why are the other penetrations so large? Also in the future we need to know the impact of any information you lack. We will always try our best respond if we understand the impact and the time frame.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/20/2004 8:49:15 AM >>>

Howard,

We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Wednesday, February 18, 2004 11:39 AM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**CC:** Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com)

**IP7\_028232**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/20/2004 1:25:58 PM  
**Subject:** Fwd: RE: Donut for Lighters

Please put together an estimate for the donuts for the igniter piping along with the donuts for the ABB Scanner. This would be three sets of donuts two for the igniter and one of the ABB Scanner. The Igniter donut that fits up to the front plate of the burner shall be sealed welded to the igniter and the front plate. The donut for the igniter that penetrates the back plate of the outer damper shall be stitch welded on the outside of the donut only, the inside diameter of this donut shall not be welded, but needs to be a close fit with no more that 1/16th inch gap. The donut for scanner opening in the back plate of the outer damper shall have a stitch weld on the outer diameter and no welding on the inner diameter, but shall maintain a close fit with no more that 1/16th inch gap.

>>> James Nelson 2/20/2004 10:28:50 AM >>>

What is the recommended clearance for these penetrations? Yes we should probably get a quote from Darrell to add these rings.

>>> Howard Hamilton 2/20/2004 9:02:18 AM >>>

Will this be and extra to TEI to make the rings? Also with a donut there will be two welds instead of one the outer weld on the ring should be and extra?

Is this work backchargable to ABT?

Please advise as TEI should make the donuts next week and I will need to issue a work release asap.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/20/2004 8:49:15 AM >>>

Howard,

We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Wednesday, February 18, 2004 11:39 AM

To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Cc: [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); James Nelson; Phil Hailes;

[ssteede@teiservices.com](mailto:ssteede@teiservices.com)

Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of the hole in the ABT Burner is 6".

IP7\_028233

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**CC:** James Nelson; Phil Hailes

**From:** Howard Hamilton  
**To:** James Nelson; Phil Hailes  
**Date:** 2/20/2004 9:02:18 AM  
**Subject:** Fwd: RE: Donut for Lighters

Will this be and extra to TEI to make the rings? Also with a donut there will be two welds instead of one the outer weld on the ring should be and extra?

Is this work backchargable to ABT?

Please advise as TEI should make the donuts next week and I will need to issue a work release asap.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/20/2004 8:49:15 AM >>>

Howard,

We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Wednesday, February 18, 2004 11:39 AM

To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Cc: [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); James Nelson; Phil Hailes;

[ssteede@teiservices.com](mailto:ssteede@teiservices.com)

Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**IP7\_028235**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "James Nelson" <JIM-N@ipsc.com>, "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/20/2004 12:01:40 PM  
**Subject:** RE: Donut for Lighters

James,

Your right, we should have told you what we were doing due to lack of information. We were on such a fast track to meet the delivery requirements, we missed communicating this to you.

The only other penetration through the burner front plate is the scanner hole. We provided a 3" NPT pipe nipple which is the requirement ABB gave us for connecting their scanner assembly. Please let me know if something is missing from ABB's supplied equipment.

Sal

-----Original Message-----

From: James Nelson [mailto:JIM-N@ipsc.com]  
Sent: Friday, February 20, 2004 12:17 PM  
To: sal@advancedburner.com; Howard Hamilton  
Cc: tarkel@advancedburner.com; Phil Hailes; ssteede@teiservices.com  
Subject: RE: Donut for Lighters

This may explain the ignitor hole size but why are the other penetrations so large? Also in the future we need to know the impact of any information you lack. We will always try our best respond if we understand the impact and the time frame.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/20/2004 8:49:15 AM  
>>>

Howard,

We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, February 18, 2004 11:39 AM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of

IP7\_028236

the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**CC:** <tarkel@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/20/2004 8:53:19 AM  
**Subject:** RE: Donut for Lighters

Howard,

We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]

Sent: Wednesday, February 18, 2004 11:39 AM

To: sal@advancedburner.com

Cc: tarkel@advancedburner.com; James Nelson; Phil Hailes;

ssteede@teiservices.com

Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**CC:** <tarkel@advancedburner.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

IP7\_028238

## REMOVAL AND INSTALLATION NOTES:

THE FOLLOWING INSTRUCTIONS ARE SUGGESTIONS. THE SEQUENCE MAY BE MODIFIED TO ACCOMMODATE WORK FLOW, EQUIPMENT AVAILABLE, AND SKILL LEVELS OF THE WORKMEN.

UNLESS NOTED OTHERWISE ALL WELDS ARE CARBON STEEL TO CARBON STEEL.

1. REMOVE ELBOW
2. INSTALL VFD ITEM 3 (VERTICAL FUEL DISTRIBUTOR) PER DRAWING 03008-500-A03-0 IN EXISTING ELBOW
3. DISCONNECT SEAL AIR PIPING, OIL, AIR LINES AND ALL ELECTRICAL LEADS
4. REMOVE EXISTING SCANNERS, DISCARD.
5. REMOVE EXISTING OIL IGNITER AND SET ASIDE FOR REUSE
6. REMOVE INSULATION AND LAGGING AROUND EXISTING BURNER FRONT PLATE
7. REMOVE EXISTING BURNER AND DISCARD
8. REFERENCE B&W DRAWING 294359E. REMOVE ITEM e AND GRIND WELDS FLUSH TO THE EXISTING CASING WELD RING.
9. BREAK TACK WELDS OF SUPPORT RING, ITEM 10 AND SEAL RING ITEM 11
10. DISCARD ITEM 10 (ROLLED RING) AND REPLACE WITH NEW ANGLE RING SHIPPED SEPERATLY.
11. INSTALL NEW BURNER. SEE DRAWING 03008-100-A01-FW AND 03008-100-A01-RW FOR BURNER LOCATION AND SPIN. ITEM 11 SHOULD BE KEPT IN POSITION ON THE TIP.
12. CENTER BURNER IN FURNACE WALL OPENING AND LEVEL AND PLUMB BURNER. LOCATE TIP PER SIDE VIEW.
13. INSTALL BURNER CROSSOVER SUPPORT ITEM 9 (03008-100-A03-D07) AND SUPPORT END GUIDE ITEM 15 (03008-100-A03-D08), CENTER ITEM 15 ON ITEM 9 TUBING, WELD AS SHOWN IN SECTION D-D. SHIM TO FIT TO EXISTING SUPPORT RAILS. COMPLETE WELDING PER SECTION D-D.
14. LOCATE SUPPORT RING, ITEM 10, AGAINST WINDBOX WALL. TACK WELD TO WINDBOX AND BURNER FRONT PLATE
15. CENTER ITEM 11 ON THE TIP, AND TACK IN PLACE TO THE EXISTING CASING WELD RING
15. INSTALL COAL ELBOW & HORIZONTAL FUEL DISTRIBUTOR ASSEMBLY PER DETAIL B.
16. THE BURNER CAN BE MOVED UP TO 1/4" IN ANY DIRECTION TO FIT UP WITH THE EXISTING COAL PIPE ATTACHMENT.
17. FINISH WELDING FRONT PLATE AND SUPPORT RING IN PLACE SEE DETAIL "C".
18. FINISH WELDING BURNER FRONT AND SUPPORT RING PER DETAIL C
19. INSTALL FLAME SCANNER PER ABB DRAWING:  
902-2491-AA  
STNRD-B232666-107  
STNRD-D232665-025



STNRD-D232677-002

STNRD-00-D623232-000-001

20. INSTALL OIL IGNITER PER THIS DRAWING AND B&W DRAWING 294359E
21. INSTALL T/C LEADS PER MANUFACTURERS INSTRUCTIONS.
22. MAKE ALL OIL AND AIR CONNECTIONS.
23. MAKE ALL ELECTRICAL CONNECTIONS FOR THERMOCOUPLES, AND MAIN FLAME SCANNER.
24. INSULATE AND LAG BURNER FRONT
25. STROKE ALL OPERATORS TO MAKE SURE THAT THEY FULLY OPEN AND CLOSE WITH NO BINDING.
- 26 AFTER DRAFT FANS HAVE BEEN STARTED CAREFULLY TIGHTEN ALL PACKING GLANDS TO STOP ANY LEAKS AROUND SHAFTS (DO NOT OVER TIGHTEN). RECHECK ALL OPERATORS FOR MOVEMENT.

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/10/2004 12:36:40 PM  
**Subject:** Fwd: RE: Rolled Hoop Replacement

Darrell:

Develop an extra for this work and I will get it started so you are issue a POA.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/10/2004 12:14:45 PM >>>

Howard,

We are supplying L2"x3"x1/4" rolled angles so you will be gaining 1/4" of adjustment. You won't need the new angles until you are installing the burners however you can cut the tacks on the rolled hoop Item 10 in the meantime and discard it. The new rolled angles will be shipping with the last truck load (maybe some partials earlier).

We are revising the installation notes on the field assembly drawing to account for this change. Attached is a WORD file with the revised notes as they will appear on the drawing.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Tuesday, February 10, 2004 10:50 AM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
Subject: Rolled Hoop Replacement

ABT is proposing to replace the rolled hoop item 10 on ABT drawing 03008-100-A02-D2 with a rolled L2"x2"x1/4. The existing hoop is 2 3/4" wide 1/4" rolled plate. This would mean that we will be losing 3/4" of adjustment in the horizontal direction. Would it not be better to roll

.

Please advise.

IP7\_028241

**From:** Howard Hamilton  
**To:** Kathy Barnes  
**Date:** 5/13/2004 1:32:35 PM  
**Subject:** Material Received for WO 03-96033-09

Seal rings supplied by ABT to replace incorrectly manufactured rings for burners have been received and installed on the 48 unit 2 burners.

Reference: Contract 04-45618, Work Release 04-45618-03 and Pay Authorization 04-43618-19.

**CC:** James Nelson

**IP7\_028242**

**From:** Howard Hamilton  
**To:** Kathy Barnes  
**Date:** 5/11/2004 1:33:06 PM  
**Subject:** Re: Past Due P.O. 04-45618-9/Line 1

Kathy: All of the materials for this work release have been received and installed in Unit 21 for the IBAM System.

I do not know if this will make a difference but 04-45618-9 is a work release. Looking at FYI and WO 03-96033-26 I see that work release 04-45618-24 has been written for the same material.

>>> NANCY BENNETT 5/11/2004 10:17:15 AM >>>

This Purchase Order currently shows an open status. If this Purchase Order has been completed to your satisfaction, please notify Warehouse Receiving via e-mail. This is required to enable the Warehouse to receive and close out this Purchase Order. Outstanding invoices cannot be paid until the Purchase Order is closed. When email is sent to the Warehouse, please CC the buyer.

Thank you

NANCY BENNETT

**CC:** Nancy Bennett

**IP7\_028243**

**From:** Howard Hamilton  
**To:** Alan Dewsnap  
**Date:** 3/13/2004 9:36:38 AM  
**Subject:** Sub Work Orders

Please write sub work orders to 03-96033-00 for the following items for Unit #2 Burner installation:

1. Installation of ABT Opti-Flow burner windbox baffles. Baffles are to be placed in and around all 48 burners. This work is to be performed by TEI as and extra.
2. Installation of a step to access the Outer Damper Drive, new ABB Scanner and igniters on the new ABT Burners. These item are located up higher on the burner then they were in the old B&W burners. This work is to be performed by TEI as an extra.
3. Patch holes in the crotch above and below the burners. There are approximately 30 burners that have holes in their crotches that need to be repaired by welding in a new plate to cover the gap. This work is to be performed by TEI as and extra.

**From:** Howard Hamilton  
**To:** Les Lovell  
**Date:** 4/5/2004 8:27:04 AM  
**Subject:** Return of Blu Ram

Request that 14 boxes of Blu Ram be returned.

Blu Ram to be returned was on PO #04-37016 and charged to WO 03-96033-00.

The 14 boxes in question are on a pallet in the staging area located North of the GSB Warehouse.

Feb 4, 2004

## Repair Procedure for Damaged Sleeve Damper Drives

- 1 Operate the drive, if it operates smoothly with no "hard" spots as the sleeve damper moves no repairs will be necessary. If it binds do the following.
- 2 Check the drive support channel to make sure it is square to the burner front plate. A variation of up to 1/16" is acceptable in both directions. If it exceeds this, contact ABT for further directions. It may require replacement of the entire drive unit.
- 3 Determine where the drive rod is bent and cut it off 1" beyond the bend, or just beyond the end of the threaded section.
- 4 Unbolt the ratchet drive support brackets from the frame, remove the bent threaded section and discard it.
- 5 Inspect the ratchet drive for damage. If it is damaged, contact ABT for a replacement unit.
- 6 Cut a new section from the threaded rod furnished by ABT, the same length as the section cut off in #3.
- 7 Grind a weld prep on both ends of the pieces to be joined, align the two sections so that they are straight, and weld them together with a full penetration weld. (Both pieces are carbon steel)
- 8 Reinstall the ratchet drive and support brackets.
- 9 Check the operation of the drive to assure that it operates smoothly, with no binding.

Attachments:	03008-300-A00-D0	AIR REGISTER ASSEMBLY
	03008-600-A03-0	RATCHET DRIVE ASSEMBLY

Charles C. Onaitis

Cc: Sal Ferrara

IP7\_028246

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/4/2004 1:32:15 PM  
**Subject:** Fwd: Burner Repair Procedure

Darrell: I will print out copies of the drawing and bring them over for you to review and give an estimate for this repair extra.

>>> "Chuck Onaitis" <chuck@advancedburner.com> 2/4/2004 12:54:10 PM >>>  
Howard:

Attached is a repair procedure for the damaged drive mechanism on the ABT burners.

We have arranged for two sections of Acme Threaded rod to be shipped to you on one of the trucks with the burners.

I have included two additional drawings in Solidworks e-drawing format. A free viewer is available on the Solidworks website, which will allow you to view the parts in 3-D, and manipulate the viewing angle.

Please direct your questions to me and copy Sal.

Chuck Onaitis

**IP7\_028247**



# SERVICE CONTRACT PROCEDURES

**EFFECTIVE DATE: February 4, 2003**  
**Updated: October 1, 2003**

## **Service Contract:**

**Originator:** To establish a service contract, a computer or manual requisition is submitted for approval. The originator is responsible for entering all pertinent information on the requisition. The originator will note on the requisition that a service contract is requested. Do not enter a work order number at this point, only the cost account. The approved requisition is then forwarded to Purchasing. .

**Purchasing:** The requisition from the originator is processed by Purchasing. Purchasing determines if other approvals are necessary (i.e., LADWP). The contract is awarded to the vendor(Contractor) and then entered into the "Service Contract Entry" screen in TIMS.

**Contract Administrator:** Prepares a requisition for a work release using the "Requisition Entry Service" screen in TIMS. The work order is vital information and must be entered at this point for cost tracking purposes, if applicable. The Work release goes through all approvals and prints in Purchasing. Work releases may commit all or part of the contract dollar amount. Purchasing reviews the work release if the amount exceeds \$20,000 the CEO signature is required. The release is then reviewed and cold captured.

**Accounts Payable:** Accounting receives the invoice(s) from the Contractor. Accounting will process the invoices in a timely manner to ensure the Pay Authorizations can be entered for cost tracking purposes. The Accounting clerk reviews the invoice(s) and submits a copy of each invoice to the Contract Administrator, including all applicable information, to enter a Pay Authorization in TIMS. (Refer to example.)

- Receive invoice: How to know if this invoice is to be handled with this new service contract procedure?
  - ✓ Is the invoice for a service and not a physical part. Then...
  - ✓ Is the base PO number found in the Service Contract Inquiry screen as a valid contract(a Y in the right hand column) or is the Vendor found on the list of Current Service Contracts.An answer of yes means it does follow this new procedure.
  
- Stamp the invoice. All the information for the stamp is found in the screen

'Service Contract Inquiry'. If it is unclear on the invoice which work release number the invoice applies to then involve the contract administrator. Accounting will make every effort to complete the information on the stamp.

The dollar amount you put on the stamp is the amount you want to be able to match to during vouchering.

- Make a copy of the stamped, filled out invoice and stamp it (the copy) with a blue COPY stamp. The purpose of the colored stamp is to identify that copy of the invoice as the only official one for use by the Contract Administrator. Only the official one should be used to generate a pay authorization. Take the copy of the invoice to the contract administrator.
- How do I know the status of the PAY authorization?
  - ✓ You can always go to the 'Service Contract Inquiry' screen to see the status. You can determine here if the PAY authorization has been entered. If it has been entered you can see who needs to approve it next.
- Receive an email about the invoice. You will receive an email stating that a certain PO number is ready to be matched, which invoice it applies to, and the dollar amount to be matched.
- Vouchering. Use the 'Voucher Matching Entry' screen. Do not worry about whether the PO line has been received or not.

**Contract Administrator:** Receives invoice copy(s) from Accounting. Verification of all charges are accepted/denied, in part or full amount. Upon verification and acceptance, a Pay Authorization is entered in the "Service Pay Authorization" screen in TIMS, as follows:

- Before any Pay Authorization can be entered there must be a work release available in the TIMS system which you will be paying.
- The Contract administrator will make every effort to have the Pay Authorization submitted by the due date located on the accounting stamped invoice. This will allow accounting to take advantage of any discounts that are available.
- The Amount of the Pay Authorization cannot exceed the work release dollar amount.

If the invoice dollar amount is greater than the work release amount then

- ✓ Another work release maybe entered for the payment providing there are dollars available on the contract.

- ✓ A requisition maybe entered for approval for the excess dollar amount. A POA(purchase order adjustment) will be entered to increase the dollar amount of the work release based on the requisition that was entered. After the POA has been entered by the purchasing department the Pay Authorization can be entered for the total dollar amount.
- The Amount of ALL Pay Authorizations are less than the work release dollar amount and there will be no more invoices.

If the total invoice dollar amounts are less than the work release amount then

- ✓ When the Work Release is complete, the Contract Administrator will contact the Contractor and IPSC Accounting to ensure the work is complete and all invoices have been paid against the Work Release. The Contract Administrator will then close out the Work Release through Receiving. Upon closing the Work Release, the amount will reflect the total dollars paid on the Work Release.
- The Contract has no dollars available on the contract.
  - ✓ The Contract administrator will generate a requisition to increase the value of the contract. After approval of requisition, Purchasing will create a POA.
- Type in "NEW" (or press F4) at Pay Authorization prompt. (The system will automatically assign a pay authorization number.)
- At the "Service Contract No." prompt, enter the contract number. (Press F3 to look up and select a number if necessary. The list will show all valid service contract and the vendor name.)
- You are now prompted for the Work Order number. A screen automatically appears showing all current work releases for the contract. In this screen you will be able to view the work order number, a brief description, the work release number, and a description of the work release. Choose the appropriate line. If an incorrect work order number is assigned, the costs of the contract will not properly flow to the equipment. It is imperative that the correct work order number is assigned.
- The "Approval Required" prompt defaults to "N" unless the payment is over \$5,000 and/or is a 402 capital item.

- The Service Contract number and “Work Release No.” Will be automatically filled in based on the previous entry. The line number will automatically be added if there is only one line on the work release. If there are multiple line items you will be prompted to pick which line you are paying.
- At “Item Description” prompt, the Contract Administrator will enter the invoice reference number(s) being paid and give a brief description of the services to be paid.
- The “Account Number” defaults to the cost account of the work order number. The user may modify this number as needed. IE(503,502)
- The “Buyer Number” defaults based on the Service Contract number previously entered.
- The “Unit of Measure” prompt defaults to “EA” (or may be manually entered).
- The “Quantity Required” prompt requires a manual entry.
- The “Unit Cost” prompt defaults to “No Charge.” This field will have a manual entry based on the costs on the copied invoice(s) provided by Accounting to the Contract Administrator.
- The “Date Entered” prompt defaults to the current date.
- The “Vendor” prompt defaults, based on the contract number.
- The “Notes” prompt is not a required field and can be used at the Contract Administrator’s discretion.
- When all information is entered, select “F” to file. When you “File,” certain criteria are met for approvals. If the payment is over \$5,000, and/or is a 402 capital item, the requisition is automatically sent through the normal approval process. If the requisition does not meet either of these criteria, the system will automatically release the Pay Authorization. (If the Contract Administrator wants the requisition to go through the approvals, select Item 1 and manually enter “Y.”)
- After final approval and PO print takes place in Purchasing, an electronic Pay Authorization is generated.
- The system then automatically generates an e-mail based on the approval of the Pay Authorization. The e-mail is sent to Crew 13 (Accounting), The subject line of the e-mail will contain the vendor name and a notation that the Pay Authorization has been approved. The body of the e-mail will contain the dollar amount of the Pay Authorization and the actual Pay Authorization number that Accounting is to voucher against. The Pay Authorization will be received

automatically and no e-mail will be sent to the warehouse.

- Accounting IS NOT to manually release if/when a Pay Authorization is suspended.
- The Contract administrator will contact the warehouse to receive the work release when the work is complete and all the pay authorizations have been entered.

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/3/2004 5:00:29 PM  
**Subject:** Fwd: Burner damage as received at Intermountain

Darrell: Note that Jim shows two bent rods in his photos. I Know that the one rod is on CW4 which is located on the 7th floor rearwall, but I have not seen the second rod. ABT is sending in two rods.

>>> James Nelson 1/30/2004 2:39:25 PM >>>

Peter,

I appreciate your response in dealing with the shipping restraint issues.

As you will note in the attached photos the shipping supports on three or four of the first eight burners delivered were buckled under. The damage to the respective plates appears to be only slight. Also at least two of the outer damper actuation rods are bent at the front. ( in the area of the threads). Other contact damage appears at first glance to be slight also.

Joel, Sal, Tarkel:

I spoke with tarkel moments ago. I appreciate Tarkel and Joel getting things underway to address the issue. You are all welcome to inspect them personally at any time you choose. Unless we notify you otherwise we would intend to have TEI correct the problems and settle up with ABT for the cost of repairs. Please let me know of any issues that need to be addressed in order for the corrections to the burners to be made on site.

Please provide any specific guidance you feel would be required in correcting the issues as we have described them and as shown in the attached photographs. We will certainly contact you if we feel we need any guidance in the course of repair.

We will notify you if Howard finds anything more significant with a thorough inspection on Monday. We will get TEI to give a number to repair the affected burner components and let you know what the work will entail.

**IP7\_028253**

**From:** "Chuck Onaitis" <chuck@advancedburner.com>  
**To:** "Howard" <howard-h@ipsc.com>  
**Date:** 2/4/2004 1:00:38 PM  
**Subject:** Burner Repair Proceedure

Howard:

Attached is a repair proceedure for the damaged drive mechanism on the ABT burners.

We have arranged for two sections of Acme Threaded rod to be shipped to you on one of the trucks with the burners.

I have included two additional drawings in Solidworks e-drawing format. A free viewer is available on the Solidworks website, which will allow you to view the parts in 3-D, and manipulate the viewing angle.

Please direct your questions to me and copy Sal.

Chuck Onaitis

**CC:** "Sal Ferrara" <sal@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>

**IP7\_028254**

Feb 4, 2004

## Repair Procedure for Damaged Sleeve Damper Drives

- 1 Operate the drive, if it operates smoothly with no "hard" spots as the sleeve damper moves no repairs will be necessary. If it binds do the following.
- 2 Check the drive support channel to make sure it is square to the burner front plate. A variation of up to 1/16" is acceptable in both directions. If it exceeds this, contact ABT for further directions. It may require replacement of the entire drive unit.
- 3 Determine where the drive rod is bent and cut it off 1" beyond the bend, or just beyond the end of the threaded section.
- 4 Unbolt the ratchet drive support brackets from the frame, remove the bent threaded section and discard it.
- 5 Inspect the ratchet drive for damage. If it is damaged, contact ABT for a replacement unit.
- 6 Cut a new section from the threaded rod furnished by ABT, the same length as the section cut off in #3.
- 7 Grind a weld prep on both ends of the pieces to be joined, align the two sections so that they are straight, and weld them together with a full penetration weld. (Both pieces are carbon steel)
- 8 Reinstall the ratchet drive and support brackets.
- 9 Check the operation of the drive to assure that it operates smoothly, with no binding.

Attachments:	03008-300-A00-D0	AIR REGISTER ASSEMBLY
	03008-600-A03-0	RATCHET DRIVE ASSEMBLY

Charles C. Onaitis

Cc: Sal Ferrara

IP7\_028255



**From:** Howard Hamilton  
**To:** Alan Dewsnap  
**Date:** 3/13/2004 9:36:38 AM  
**Subject:** Sub Work Orders

Please write sub work orders to 03-96033-00 for the following items for Unit #2 Burner installation:

1. Installation of ABT Opti-Flow burner windbox baffles. Baffles are to be placed in and around all 48 burners. This work is to be performed by TEI as and extra.
2. Installation of a step to access the Outer Damper Drive, new ABB Scanner and igniters on the new ABT Burners. These item are located up higher on the burner then they were in the old B&W burners. This work is to be performed by TEI as an extra.
3. Patch holes in the crotch above and below the burners. There are approximately 30 burners that have holes in their crotches that need to be repaired by welding in a new plate to cover the gap. This work is to be performed by TEI as and extra.

**WO 9396033-00**  
**INSTALL 48 LOW NOX BURNERS**  
**PO/CONTRACT 04-45618**  
**SPEC 45618**  
**ACCOUNT 00-2SBX-402**

WO# SUB	TEI EST	TEI FINAL	1 <sup>st</sup> REQ	2 <sup>nd</sup> REQ	POA	COMMENTS
000	\$14000		200214	200375	002	MDFY RESTRICTERS IN U2 COAL PIPE
005	\$2283	\$2039	200214	199841	001	DCS I/O CABINET PLATF 5 <sup>TH</sup> FLOOR
012	\$474	\$408	200214	200476	004	AIR TEST TUBING 1 <sup>ST</sup> 16 BURNERS
015	\$29453		200144	200477	005	U1&2 FURNACE RW ACCESS WAY
020	\$3232	\$3562	200214	200474	003	RMVE AND REPLACES ABT SEAL RINGS
021	\$5153	\$5602	200214	200520	006	DONUTS TO SEAL GAPS INGNTR/SCNNR
022	\$9356		200214	200606	007	MDIFY PACKING GLAND ABB SCANNER
025	\$54579		200214	200681	008	LABOR FOR IBAM TO PITOT TBE PIPING
026	\$16164		200214	200682	009	MAT'L FOR IBAM TO PITOT TBE PIPING
027	\$5720		200214	200719	010	REFURBISH 48 COAL VALVES
028	\$1346		20014	200720	011	REFURBISH 48 BURNER IGNITERS
030	\$25858		200214	200813	012	INSTALL VERTICAL FUEL DIFFUSERS
031	\$4232		201214	200101	013	MODIFY HFDs BACK CHARGE
038	\$6464		201214	201513	014	APLY BLU RAM TO BURNER CROTCHES
	176968					

PURCHASE ORDER ITEMS SEPARATE FROM WORK RELEASE ITEMS					
016	\$808	\$816	200153	04-37477-L2	PROVE DAMPERS ON 48 BURNERS
018	\$740	\$816	200144	04-37477-L4	REPAIR TWO DAMAGED BURNER RODS
015	\$8088		200484		2-TON CHAIN HOIST FOR RW ACCESS
015	\$32		200485		SHACKLE SPRT 2-TON CHAIN HOIST
019	\$11380		200133	04-37477-L1	ESTIMATED 169 TUBE REPAIR WELDS

**IP7\_028257**

012	\$959	\$816	200162	04-37477-L3	AIR TEST TBNG 32 RMNING BURNERS
036	\$75000		199527	04-37722	INSTALLING ABT BAFFLE SYSTEM

**WO 9396033-00**  
**INSTALL 48 LOW NOX BURNERS**  
**PO/CONTRACT 04-45618**  
**SPEC 45618**  
**ACCOUNT 00-2SBX-402**  
**MINUS BACK CHARGE AND MAINTENANCE**

WO# SUB	TEI EST	TEI FINAL	1 <sup>st</sup> REQ	2 <sup>nd</sup> REQ	POA	COMMENTS
000	\$14000		200214	200375	002	MDFY RESTRICTERS IN U2 COAL PIPE
005	\$2283	\$2039	200214	199841	001	DCS I/O CABINET PLATF 5 <sup>TH</sup> FLOOR
015	\$29453		200144	200477	005	U1&2 FURNACE RW ACCESS WAY
25	\$54579		200214	200681	008	LABOR FOR IBAM TO PITOT TBE PIPING
26	\$16164		200214	200682	009	MAT'L FOR IBAM TO PITOT TBE PIPING
30	\$25858		200214	200813	012	INSTALL VERTICAL FUEL DIFFUSERS
	142337					

**From:** Howard Hamilton  
**To:** Nancy Bennett  
**Date:** 2/28/2004 4:31:33 PM  
**Subject:** POA 04-45618-005

Why does this POA have listed for unit price "Advise".

Please advised.

**CC:** James Nelson

**IP7\_028259**

**From:** Howard Hamilton  
**To:** Bernell Warner  
**Date:** 4/28/2004 10:51:44 AM  
**Subject:** Drawing Changes for Rear Wall Access Hoists

Make the following changes to the drawings listed. These changes pertain to the installation of the furnace rear wall access way installed during the Unit 2 outage.

**P&ID Drawing changes:**

1BSA-M1014 - Show the access way, support bent and hoist, add the new equipment number for the 2 ton electric chain hoist 1BSA-HOI-B6A to the equipment table at the top of the drawing. I will add the hoist number in DataTrak as soon as it becomes available.

1BSA-M1011, 1BSA-M1012 and 1BSA-M1013 - Show the access way in each of these drawings.

2BSA-M1014 - Show the access way, support bent and hoist, add the new equipment number for the 2 ton electric chain hoist 2BSA-HOI-B6A to the equipment table at the top of the drawing. I will add the hoist number in DataTrak as soon as it becomes available.

2BSA-M1011, 2BSA-M1012 and 2BSA-M1013 - Show the access way in each of these drawings.

**Changes to Existing Structural Steel Drawings:**

1BSA-S6057, 1BSA-S6067, 1BSA-S6077 and 1BSA-S6087 - Show steel that was added for the access way.

1BSA-S6057, 1BSA-S6067, 1BSA-S6077 and 1BSA-S6087 - Show steel that was added for the access way.

**Add new AutoCad Drawings to the B&V Drawing List:**

Drawing 03-96033-15 sheet 1 of 3, Drawing 03-96033-15 sheet 2 of 3 and Drawing 03-96033-15 sheet 3 of 3 were developed to show the installation of the access way in Units 1 and 2.

Assign drawing number for Unit 1 to this set of three drawings: 1BSA-S6XXXXA, 1BSA-S6XXXXB, 1BSA-S6XXXXC.

Assign drawing number for Unit 2 to this set of three drawings: 2BSA-S6XXXXA, 2BSA-S6XXXXB, 2BSA-S6XXXXC.

Pam and Jon C. will be changing 1 line drawings to show the power hook up for the two electric chain hoists called out above and adding electrical drawing if required. Brad Thompson is the Planner over the installation of the hoists , which arrived on Monday, April 26th. The hoist are presently stored two boxes located in Receiving.

**CC:** Brad Thompson; Jon Christensen; Pam Bahr

**From:** Roger Frazier  
**To:** Hamilton, Howard  
**Date:** 4/22/2004 3:12:12 PM  
**Subject:** Electric Chain Hoist

Two electric chain hoists have arrived, and are staged in receiving, between the boiler tubing.

P.O. 04 - 38762

W.O. 03-96033-15

**From:** Howard Hamilton  
**To:** Brad Thompson; Jon Christensen; Pam Bahr  
**Date:** 4/28/2004 4:53:35 PM  
**Subject:** New Hoist in DataTrak

I have assigned equipment numbers 1BSA-HOI-B6A and 2BSA-HOI-B6A in DataTrak for the two new hoist to be installed for the rear wall access way.

The Harrington 2 ton chain hoist are in Receiving.

Brad note that I assigned the hoist with serial number 3ASY8262-2322 to unit 1 and the hoist with serial number 3BSY1271-2636 to unit 2.

Jon - Information pertaining to the electrical and motor I leave for you to fill in.

Brad - Information on lubrication I leave for you to fill in. Contact me and I will see that this information is placed in DataTrak when you decide how you want to lubricate.

**From:** Howard Hamilton  
**To:** Pam Snyder  
**Date:** 1/9/2004 2:43:36 PM  
**Subject:** Sunday Delivery of OFA Steel

Darrell Steede has advised that a load of structural steel for the OFA System will probably arrive on site this Sunday, January 11, 2004.

Darrell has directed the truck driver to use the phone at Post 3 to contact Security to let the truck on site.

I have authorized this delivery with Security.

Contact Darrell at:

Cell 251-402-0095  
Homes 864-2287

Darrell will come on site to unload this truck upon being contacted.

**CC:** James Nelson; Phil Hailes

**IP7\_028263**



**From:** Howard Hamilton  
**To:** Jon Finlinson  
**Date:** 1/8/2004 11:19:56 AM  
**Subject:** Cigarette buckets

I was mistaken when I told you this morning that TEI was placing cigarette buckets inside the boiler building.

I checked with TEI and physically saw that all cigarette buckets are placed outside.

There are 10 buckets located at various locations through out the unit 2 boiler outside on decks at several elevations.

TEI will service these 10 buckets as required.

TEI will also place and maintain 20 garbage barrels through out the Unit 2 boiler.

**CC:** Jon Finlinson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

**IP7\_028264**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/20/2004 1:55:46 PM  
**Subject:** Fwd: ABT burner thermocouple installation difficulties

Darrell: FYI

Hugh: Give to Isely.

>>> Jerry Finlinson 2/20/2004 1:51:05 PM >>>  
FYI,

Yesterday, I took one of the thermocouples out and tried sliding it down the thermowells that are installed in the burner.  
It would only slide in about 13 inches before hitting a tight bend in the thermowell. Apparently your installers are making some sharp corner bends on the thermowell that's making it very difficult to insert.

Have you tried inserting one?

The type E thermocouples that we have are 3/16 inch diameter and don't bend so easy.

Maybe we'll need to get some 1/8 inch diameter thermocouples.

I noticed that there are some sharp bends on the thermocouple out near the tip as well. The bends are only 10 to 15 degrees, but they have a sharp corner, it would have been better to make it very gradual, then the thermocouple would slide in easily.

Please advise on your recommended solution.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**CC:** Hugh Loukinas

**IP7\_028265**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/9/2004 4:20:21 PM  
**Subject:** Fwd: ABT/Intermountain (10354G01) -- Delivery Status & Test Installation

Darrell: FYI

>>> <james.m.clark@us.abb.com> 2/9/2004 8:42:47 AM >>>

Hello Jerry, 2 items:

1) Scanner material delivery status -- You should have received all items except the (48) scanner packing glands. Most items have shipped no later than 1/23/04 (and some as early as 12/4/03). The packing glands are scheduled to ship tomorrow, 2/10/04.

2) Installation -- We see no problem with a single test fit-up of (1) scanner while the burners are staged on the deck. However, we do not recommend that you permanently install any ABB equipment beyond the guidepipes before the burners are attached to the burner front. There is much too high a probability of damage otherwise.

Regards -- Jim

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/07/2004 12:10 PM

02/07/2004 "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>  
12:10 PM  
Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: James M. Clark/USIMS/ABB@ABB\_US01

"Bill Morgan" <[BILL-M@ipsc.com](mailto:BILL-M@ipsc.com)>, "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>, "Jon Christensen" <[JON-C@ipsc.com](mailto:JON-C@ipsc.com)>, "Ken Nielson" <[KENNETH-N@ipsc.com](mailto:KENNETH-N@ipsc.com)>, "Phil Hailes" <[Phil-H@ipsc.com](mailto:Phil-H@ipsc.com)>  
Subject: Estimated delivery of flame scanner detectors and fiber optics?

IP7\_028266

James,

We'd like to try mounting some of the flame scanner fiber optics and detectors on our burners while they are staged on the burner deck to ensure that they fit properly and to measure how far from the end of the tube the fiberoptic is located, we may also need to order additional fittings for the cooling air connection.

Would you recommend that we install the thermocouples and flame scanners on the burners prior to moving them into position or wait until after they are installed? We'd prefer to do it with them sitting on the burner deck as we have better access.

Can you give us the estimated ship date of the detectors and remainder of the equipment?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/11/2004 2:00:23 PM  
**Subject:** Fwd: IBAM purge air supply

Darrell: FYI

Hugh: Give to Isely

>>> Jerry Finlinson 2/7/2004 8:58:57 AM >>>

Ken/Bill,

This week I walked down IBAM purge air supply with Hank Johnson and Dave Reit GSL. There is a 2 inch air supply header around the boiler on the 5th 7th and 9th LVL's. Dave proposed to use 1.5 inch copper tubing down the front side from 9th floor to pick up all 4 IBAM panels and back side up from 5th floor on 1.5 inch header. It would be more consistent to come down from the 9th floor on both front and rear to make it more consistent. Please let Dave know that.

We'll have a 1" T off the header through filters and 3/4 flex hose to IBAM panel. We thought that in the location of the IBAM panels, it's not so hot, so the 3/4 inch brake hose would make a good flex connection rather than using stainless flex, which costs much more. Dave will purchase the materials for this installation, except the filters, which Jim Knapp has ordered.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

IP7\_028268

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/17/2004 1:29:50 PM  
**Subject:** Fwd: Operations Release Date

The "Operations Release Date" is March 23, 2004 at 7:00 AM not the date shown below that was sent out earlier.

>>> Howard Hamilton 2/17/2004 10:19:02 AM >>>

I have talked to James Nelson and have been advised the that the "Operations Release Date" is March 3, 2004 at 7:00 AM.

This is the date that determines whether TEI gets a bonus for beating the schedule or a penalty for not meeting the schedule.

To avoid a penalty TEI must have the burners operational on or before this date.

**CC:** James Nelson; Phil Hailes

**IP7\_028269**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/9/2004 4:46:00 PM  
**Subject:** Fwd: RE: Welding Clarification

Darrell: FYI - I guess they can weld them any way they want to.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/9/2004 7:59:19 AM >>>  
Howard,

Stitch welding these components is in accordance with our design requirements. Some may be stitch welded on either the outside or the inside. The welds you called "spot welds" are actually "tack welds" that are just done to line up the parts during fabrication, then later stitch welded either on the inside or outside.

There is no reason, performance or mechanical, that the components be fully welded.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Friday, February 06, 2004 7:15 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: James Nelson; Phil Hailes  
Subject: Welding Clarification

Attached photo shown stitch welding of the burner throat.

Our question is why these burner throat seams were stitch welded and not fully welded for their entire length. In fact the the two shroud welds are spot welded.

IP7\_028270

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/19/2004 7:29:13 AM  
**Subject:** Fwd: U2 Flame Scanner status feb18 2004

This afternoon Jerry and ABB representative will bring over a tube to fit it up in one of the burners. Jerry tells me he has talked to you about this.

Will you want all 48 tubes delivered now or will you want to wait until the outage?

Would there be an advantage to install the tube before the outage.

>>> Jerry Finlinson 2/18/2004 6:54:19 PM >>>

Bill,

Just as I was about to go, Jon C tells me that you had some questions.  
So here are the answers.

I got a call from Harry Duhalik today asking me to try placing a scanner in position on the burner to make sure they fit correctly. I tried to track down the shipment. The FedEx Freight website said they were still in SLC, but later I got an email that we received them on Monday. So tomorrow I'll go find them and do the fit test.

Mike Tolar is doing the training class. He is going to be coming back 25 March to do the commissioning and startup.  
He's giving us lots of tips and things to check out before he arrives. I'm going to run my drawings by him tomorrow on the wiring details. He thinks it will take 5-7 days after startup to get it all tuned and set up, so he'll stay as long as it takes.

He's also reviewing how to install and insert them, so that will be good.

We'll review with TEI how to install the guide pipes, as soon as I find them tomorrow.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**CC:** Hugh Loukinas

IP7\_028271



**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/17/2004 10:19:02 AM  
**Subject:** Operations Release Date

I have talked to James Nelson and have been advised the that the "Operations Release Date" is March 3, 2004 at 7:00 AM.

This is the date that determines whether TEI gets a bonus for beating the schedule or a penalty for not meeting the schedule.

To avoid a penalty TEI must have the burners operational on or before this date.

**CC:** James Nelson; Phil Hailes

**IP7\_028272**

**From:** Howard Hamilton  
**To:** James Nelson  
**Date:** 2/20/2004 8:01:46 AM  
**Subject:** Re: Removal of Sprinkler Piping

TEI asked to see if the piping could be removed. It will be in the way of rigging the old burners out and the new burners in. It could be worked around but with the flurry of activity going on I'm sure it would be damaged. Best to have it removed.

>>> James Nelson 2/19/2004 3:59:36 PM >>>

If this is going to be an interference issue for Safeway or TEI, I'm confident we could get special permission to do it the day before. Let me know.

>>> Howard Hamilton 2/19/2004 3:12:30 PM >>>

I talked to Sylvan Lovell this morning and asked if it would be possible to remove the burner front sprinkler piping for the front and rear of the boiler.

Sylvan advised that he needs to take a closure look but at first blush it would appear that Safety would be able to remove the sprinkler piping.

Sylvan stated that if he decides that the sprinkler piping could be removed he will have his people do it Saturday morning February 28, 2004.

The attached photos show the piping in question.

**IP7\_028273**

**From:** Howard Hamilton  
**To:** Sylvan Lovell  
**Date:** 2/24/2004 12:16:45 PM  
**Subject:** Burner Front Sprinkler Piping

After further consideration TEI has decided it will not be necessary to remove the sprinkler piping for the front and rear burners.

IPSC Safety will isolate the burner front sprinkler system and shut it off on Saturday Morning, February 28th.

Should TEI accidently damage the burner front sprinkler piping during the outage they will notify IPSC immediately so that IPSC Safety can inspect and repair the damage.

**CC:** James Nelson; Phil Hailes; ssteede@teiservices.com

**IP7\_028274**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/19/2004 3:12:30 PM  
**Subject:** Removal of Sprinkler Piping

I talked to Sylvan Lovell this morning and asked if it would be possible to remove the burner front sprinkler piping for the front and rear of the boiler.

Sylvan advised that he needs to take a closure look but at first blush it would appear that Safety would be able to remove the sprinkler piping.

Sylvan stated that if he decides that the sprinkler piping could be removed he will have his people do it Saturday morning February 28, 2004.

The attached photos show the piping in question.

**CC:** James Nelson; Jerry Finlinson; Phil Hailes; Sylvan Lovell

**IP7\_028275**

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 2/19/2004 3:59:36 PM  
**Subject:** Re: Removal of Sprinkler Piping

If this is going to be an interference issue for Safeway or TEI, I'm confident we could get special permission to do it the day before. Let me know.

>>> Howard Hamilton 2/19/2004 3:12:30 PM >>>

I talked to Sylvan Lovell this morning and asked if it would be possible to remove the burner front sprinkler piping for the front and rear of the boiler.

Sylvan advised that he needs to take a closure look but at first blush it would appear that Safety would be able to remove the sprinkler piping.

Sylvan stated that if he decides that the sprinkler piping could be removed he will have his people do it Saturday morning February 28, 2004.

The attached photos show the piping in question.

**IP7\_028276**

**From:** Howard Hamilton  
**To:** Sylvan Lovell  
**Date:** 1/9/2004 3:27:31 PM  
**Subject:** Temporary Ladders

Attached are photos of the two ladders you requested to resolve the safety issue when the stairway from floor 5 to 8 located on burner rearwall east side.

Pleaser review ladders and hang safety signs as required.

TEI will install ladder cages if you direct them too. I requested that they contact you prior to fabricating them as OSHA does not required cages on ladders under 20ft.

The stairway for the 5th to the 8th floor will not be removed until we have an official shipping schedule from ABT. TEI would like to use the ladder for access until they need to be removed for rear wall burner staging.

**CC:** James Nelson; Jon Finlinson; Lorie Cloward; Phil Hailes;  
ssteede@teiservices.com

**IP7\_028277**

**From:** Howard Hamilton  
**To:** Phil Hailes  
**Date:** 12/22/2003 1:35:51 PM  
**Subject:** 12-18-03 Telecon with Sal Farrara of ABT

Called Sal on Thursday 12/18/03 and discussed the following:

1. Overall dimensions for the burners:

- a. The overall shipping length of the burners will be 13'-6-1/2".

Note: This is from the front end of the burner to the end of the bracket support for the damper drive.

- b. The overall width of the burner proper is 6'-6-3/8".

Note: This is the diameter of the back plate.

- c. The overall shipping width of the burners will be 7'-10-3/4".

Note: This is the front support bracket for the burner. ABT will tack weld this to the chevron supports that weld to the burner proper. The bracket is used to stabilize the burner during shipping. It can be easily removed as it is only tack welded if required to assist in the rigging of the burner.

Note: because the dimension of the burners are large I called Tinker Steed at TEI and requested to know if he had considered rigging of such a large burner. Tinker advised that he had walked down a route and went over same with Phil Hailes. Tinker is confident that the burners to the rear wall can be rigged into position. Tinker feels that a fair amount of preparation will be required including rigging and steel removal and alterations.

I will get with Phil next week and walk down the proposed TEI route with him to get a better feel for the access path to the rear wall burners.

2. I asked Sal how many types of burners there would be.

- a. Sal advised that there are two types of burners supplied for our project clockwise (CW) and counterclockwise (CCW).

- b. Each Burner would be marked CW or CCW and would be required to fit into a position called out as CW or CCW on the ABT arrangement drawings.

- c. I asked if the burners would each have their own specific identification number placed on the burners. Sal advised that he did not know for sure but that CW and CCW would probably be the only identification required to properly install the burners. Sal will get back to Howard if ABT will be providing separate marks or identification numbers for the burners.

Sal will provide clarification for identification numbers the week of 12/22/03.

3. I asked Sal how CW and CCW were determined.

- a. Sal stated the direction of the spin of the fuel and air of the burner as seen from standing directly behind the back plate of the burner and looking toward the boiler interior was how CW

and CCW were determined.

b. This would apply to both the front wall burners and the rear wall burners.

4. I asked Sal about ABT Support for this project.

a. A construction adviser is generally provided. He comes out just prior to demolition and works with setting the new burners. He is required for as long as it takes to work out any of the problems that may arise and the customer is satisfied with the burner placement.

b. A start-up adviser is brought on site just prior to bringing the unit back on line.

c. The Construction Adviser and the Start-up Adviser can be the same person or they can be two different people.

d. Sal advises that ABT has not decided who will be assigned these positions

Note: James Nelson advises that an ABT technician will be on site with the start of the outage (2/28/03) and will be on site thru completion of the start-up.

5. I asked Sal if it was possible to lift the burners up on there end if required to rigg into position.

a. Sal advised that two lugs could be welded almost anyplace on the 3/4" mild steel back plate to lift the burners.

b. Sal would advise against placing lugs on the front of the burners do to the potential damage to all of the items sticking out from the front plate (damper drives, spin vale controls, igniter sleeve etc.).

**CC:** James Nelson; Jerry Finlinson; sal@advancedburner.com;  
tsteed@teiservices.com



**From:** Howard Hamilton  
**To:** Kevin Miller  
**Date:** 1/8/2004 11:08:41 AM  
**Subject:** Air Heater Power Requirements.

Darrell Steede has reviewed your request to go with 480 volt, 60 amp 3 phase power on the 5th floor back at the secondary air heaters.

Darrell advised that he can run a 6 bank welding machine for the air heaters that will meet his needs. Thus, 480 volt, 60 amp 3 phase power will be adequate for his needs.

Proceed with upgrading the existing power 60 amps.

**CC:** Bret Kent; James Nelson; Phil Hailes; ssteede@teiservices.com

**From:** Howard Hamilton  
**To:** Phil Hailes  
**Date:** 1/8/2004 11:24:50 AM  
**Subject:** Burner Access.

Dale Hurd, Kelly Cloward, John Byrd and Myself meet at the Unit 2 turning bay access at 8:00 am and discussed the following:

1. TEI wanted access to the Unit 2 west side overhead boiler crane through the west side Pulverizer alley.
2. Maintenance will have Pulverizer 2F out for a major overhaul for the next 3 weeks blocking access through the West Side Pulverizer Alley.
3. Burners for Unit 2 should start arriving late next week (1/16/04).
4. An alternate route to the Unit 2 west side overhead boiler crane was suggested by Dale. The new route will be through the roll up door to Unit 2 Turbine bay, north thru the bay and make a right turn to the east between column lines E and F down to the pulverize access alley making a turn left to the north and then to the Unit 2 west side overhead boiler crane. This will require TEI to unload the 48 burners onto carts because of the low overhead of only 7'-4" down E and F rows.

The above was agreed to by TEI with the following considerations:

- a. IPSC and any contractors needing to use the West Crane Bay during staging of the burners will need to coordinate with TEI to minimize impact to the burners. The tentative delivery schedule for the burners is 1/16/04 to 2/23/04.
- b. The pulverizer motor and materials presently in the crane bay will be moved to give TEI access for the burners.

Note: IPSC moved the motors and related items out of the way on 1/07/04.

- c. TEI can use the areas bounded by columns E210, E212, D212 and D210 on the ground floor for storage of burners. This storage area will be required mostly for the front wall burners on the 7th and 8th floors. These floors have little area for storage and TEI will be hard put to store 3 of the six burners required at each floor.
- d. When the outage starts on 2/28/04 TEI will need access thru the west side Pulverizer alley. It was agreed that none of the pulverizers on the west side will be in a major overhaul during the outage. Pulverizer doors will be open and access platforms placed for inspections during the outage, but Maintenance will coordinate with TEI to give them access as required to minimize impact.

Note: TEI asked if it would be okay to move Pulverizer access platforms or ladders during the night shift if they were in the way provided they put them back. Dale and Kelly stated that this would be okay.

**CC:** Bret Kent; Dale Hurd; Dave Hahn; James Nelson; Kelly Cloward;  
ssteede@teiservices.com

**IP7\_028281**

**From:** Howard Hamilton  
**To:** tsteede@teiservices.com  
**Date:** 12/31/2003 5:25:11 PM  
**Subject:** Construction Power for TEI

Kevin Miller and I walked down the power requested by Darrell Steede in his faxed memo of 12/23/03. The following points were made concerning this walkdown.

Reference the memo from TEI for the following itemized power:

1. OFA System:

IPSC has in place 480 volt, 3 phase, 100 amp disconnects located in the following four places.

- a. H207, 9th floor
- b. H203, 9th floor
- c. L203, 9th floor
- d. L207, 9th floor

This is what TEI had last year.

2. Burners front and rear wall.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects located in the following places by the end of next week:

- a. 8th floor, burner front wall, over by column line G204 on the east side of the boiler.
- b. 8th floor, burner rear wall, over by column line M205 located on the centerline of the boiler.

Note: Talked to Darrell Steede and he requested the above locations in my phone conversation with him on 12/31/03.

3. Air Heater

Kevin Miller is in the process of supplying two 480 volt, 3 phase disconnects and two power carts (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

- a. Column line Q205, elevation 4743'-11", which I believe is the 5th floor.
- b. TEI also wants a 480 volt 3 phase disconnect located on the ground floor next to column R205. TEI will be using this to power a compressor they will be using to power several air tuggers that will be using the Up and Up Air Heater Access Ways. Kevin will try to have this power in place by the end of next week.

Talked to Darrell on 12/31/03 to verify the above power requirements and locations.

4. Super Heater Panels:

IPSC has in place 480 volt, 3 phase 100 amp disconnects located in the following three places.

- a. H207, 14th floor

- b. L207, 14th floor
- c. H203, 13th floor

5. Tool room 14th floor.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects and a power cart (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

H207, 14th floor.

**CC:** Bret Kent; Dave Hahn; James Nelson; Jerry Finlinson; Kevin Miller; Phil Hailes

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/11/2004 11:35:27 AM  
**Subject:** Fwd: Req. 200071, Vacuum Truck Rental

Darrell: FYI

Hugh: Give to Isely.

>>> Jeff Schena 2/11/2004 11:29:48 AM >>>

Ralph, Req. 200071 has been entered against Work Order 03-96033-0, Cap. Project for Burner replacement. the req. amount is an estimate based on 5 days rental, give or take a couple of days. I had a conversation with Jim Hartley with Onyx and he indicated that this would be no problem for them. This truck will be used in conjunction with the truck rented on P.O. 04-36849.

Jim came down and walked down the job with Howard Hamilton, TEI, and myself. He agreed to send down the piping and fittings on the 23rd of Feb. so that the piping runs can be setup early to expedite the start of work at the beginning of the outage. TEI has requested, through Howard Hamilton, that the trucks be here ready for service the 28th day of Feb. at 7:00 PM. Jim also indicated that this would not be a problem. Call me if you need any more info, thanks for your help.

Jeff  
ext. 6804

**CC:** Hugh Loukinas

**IP7\_028284**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/10/2004 2:42:06 PM  
**Subject:** Meeting with Onyx Representative.

Darrell:

Jim Hatley with Onyx will be on site tomorrow morning around 8:00 AM.

Jeff Schena was talking with Jim about our vacuum piping and windbox requirements and he has concerns about what we are trying to accomplish.

Jim is coming down to meet with TEI and IPSC to see exactly what it we are trying to do and possibly give some input at to how it can best be done.

I will contact you when Jim is on site and ready to tour Unit 2.

Having Jim Roberts and Tiny at this meeting would be appreciated.

**CC:** Bob Morris; James Nelson; Jeff Schena; Phil Hailes

**IP7\_028285**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 1/7/2004 4:38:45 PM  
**Subject:** Power for Compressor.

Kevin Miller still needs to know what your power requirements are going to be for the compressor that will be staged on the ground floor under the Secondary Air Heaters.

**CC:** Bret Kent; Kevin Miller; Phil Hailes

**From:** Howard Hamilton  
**To:** Kevin Miller; tsteede@teiservices.com  
**Date:** 1/5/2004 5:33:07 PM  
**Subject:** Re: Construction Power for TEI

1. Darrell Steede will try to get you the amperage required tomorrow (01/06/03). He will call you as soon as he knows.

2. A power cart will ne all that is required.

3. TEI's Trailer presently is only provided with 220 v / 50 amp service. The heater alone for the trailer is 40 amp. TEI needs a minimum of 100 amps for all of the office equipment they will be running. Can you get a transformer that will provide them with what they need?

>>> Kevin Miller 1/2/2004 7:37:30 AM >>>  
Please supply a couple of clarifications.

1. On item 3B below. What is the amperage required to run the compressor on the ground floor. I know it is 480v but need the amperage required.

2. On item 5. Your original note asked for a power supply of 220v and 110v for your tool room on 14. We will park a power cart right near H-207 which will supply both. If my memory is correct, you didn't have any 480v power at this location last year. Is the one cart adequate. It has two 240v outlets and ten 110v outlets.

3. Please use caution. ALL DISCONNECTS currently installed are energized to the line side. Terminate the load side with caution.

Thanks, Kevin

>>> Howard Hamilton 12/31/2003 5:25:11 PM >>>  
Kevin Miller and I walked down the power requested by Darrell Steede in his faxed memo of 12/23/03. The following points were make concerning this walkdown.

Reference the memo from TEI for the following itemized power:

1. OFA System:

IPSC has in place 480 volt, 3 phase, 100 amp disconnects located in the following four places.

- a. H207, 9th floor
- b. H203, 9th floor
- c. L203, 9th floor
- d. L207, 9th floor

This is what TEI had last year.

2. Burners front and rearwall.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects located in the following places by the end of next week:

**IP7\_028287**



- a. 8th floor, burner front wall, over by column line G204 on the east side of the boiler.
- b. 8th floor, burner rear wall, over by column line M205 located on the centerline of the boiler.

Note: Talked to Darrell Steede and he requested the above locations in my phone conversation with him on 12/31/03.

### 3. Air Heater

Kevin Miller is in the process of supplying two 480 volt, 3 phase disconnects and two power carts (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

- a. Column line Q205, elevation 4743'-11", which I believe is the 5th floor.
- b. TEI also wants a 480 volt 3 phase disconnect located on the ground floor next to column R205. TEI will be using this to power a compressor they will be using to power several air tuggers that will be using the Up and Up Air Heater Access Ways. Kevin will try to have this power in place by the end of next week.

Talked to Darrell on 12/31/03 to verify the above power requirements and locations.

### 4. Super Heater Panels:

IPSC has in place 480 volt, 3 phase 100 amp disconnects located in the following three places.

- a. H207, 14th floor
- b. L207, 14th floor
- c. H203, 13th floor

### 5. Tool room 14th floor.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects and a power cart (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

H207, 14th floor.

**CC:** Bret Kent; Dave Hahn; James Nelson; Jerry Finlinson; Phil Hailes

**From:** Howard Hamilton  
**To:** Kevin Miller; tsteede@teiservices.com  
**Date:** 1/5/2004 5:33:07 PM  
**Subject:** Re: Construction Power for TEI

1. Darrell Steede will try to get you the amperage required tomorrow (01/06/03). He will call you as soon as he knows.
2. A power cart will ne all that is required.
3. TEI's Trailer presently is only provided with 220 v / 50 amp service. The heater alone for the trailer is 40 amp. TEI needs a minimum of 100 amps for all of the office equipment they will be running. Can you get a transformer that will provide them with what they need?

>>> Kevin Miller 1/2/2004 7:37:30 AM >>>  
Please supply a couple of clarifications.

1. On item 3B below. What is the amperage required to run the compressor on the ground floor. I know it is 480v but need the amperage required.
2. On item 5. Your original note asked for a power supply of 220v and 110v for your tool room on 14. We will park a power cart right near H-207 which will supply both. If my memory is correct, you didn't have any 480v power at this location last year. Is the one cart adequate. It has two 240v outlets and ten 110v outlets.
3. Please use caution. ALL DISCONNECTS currently installed are energized to the line side. Terminate the load side with caution.

Thanks, Kevin

>>> Howard Hamilton 12/31/2003 5:25:11 PM >>>  
Kevin Miller and I walked down the power requested by Darrell Steede in his faxed memo of 12/23/03. The following points were make concerning this walkdown.

Reference the memo from TEI for the following itemized power:

1. OFA System:

IPSC has in place 480 volt, 3 phase, 100 amp disconnects located in the following four places.

- a. H207, 9th floor
- b. H203, 9th floor
- c. L203, 9th floor
- d. L207, 9th floor

This is what TEI had last year.

2. Burners front and rearwall.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects located in the following places by the end of next week:

**IP7\_028289**

- a. 8th floor, burner front wall, over by column line G204 on the east side of the boiler.
- b. 8th floor, burner rear wall, over by column line M205 located on the centerline of the boiler.

Note: Talked to Darrell Steede and he requested the above locations in my phone conversation with him on 12/31/03.

### 3. Air Heater

Kevin Miller is in the process of supplying two 480 volt, 3 phase disconnects and two power carts (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

- a. Column line Q205, elevation 4743'-11", which I believe is the 5th floor.
- b. TEI also wants a 480 volt 3 phase disconnect located on the ground floor next to column R205. TEI will be using this to power a compressor they will be using to power several air tuggers that will be using the Up and Up Air Heater Access Ways. Kevin will try to have this power in place by the end of next week.

Talked to Darrell on 12/31/03 to verify the above power requirements and locations.

### 4. Super Heater Panels:

IPSC has in place 480 volt, 3 phase 100 amp disconnects located in the following three places.

- a. H207, 14th floor
- b. L207, 14th floor
- c. H203, 13th floor

### 5. Tool room 14th floor.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects and a power cart (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

H207, 14th floor.

**CC:** Bret Kent; Dave Hahn; James Nelson; Jerry Finlinson; Phil Hailes

**From:** Howard Hamilton  
**To:** Phil Hailes  
**Date:** 1/7/2004 4:08:06 PM  
**Subject:** Re: Contract Cost Tracker W/O

I have requested that Alan Dewsnap generate a sub-work order for tracking of consumables ordered by me for TEI.

I will forward this number to you once Alan issues same and notify the ware house.

>>> Phil Hailes 1/6/2004 6:02:25 PM >>>  
Howard and Bret,

I gave the warehouse my contract cost tracker number (02-60456-54) for tracking the charges that TEI will make to the warehouse (ice, rags, nuts and bolts, etc) **that are attributable to the OFA job**. I use a specific extension to the base W/O number, so that I can follow and summarize the costs to back-charge TEI at the end of the job. By the end of the outage, these costs add up to several thousands of dollars.

Can each of you give them the appropriate W/O for burners and air heater work?

My intent is that anything TEI attempts to get from the warehouse and tool room be attributed to each individual contract by uttering the keywords of "OFA" or "Burners" or "Air Heater". This will help the warehouse people know which contract to charge, will help keep the costs straight and allow us to track what was used.

Vance and Garry,

I would also like to arrange things with the Tool Room so that one or two key TEI people (eg. Superintendents) can check out tools as needed, without us having to personally sign them out each time. Can this be worked out?

Thanks Phil

**CC:** Alan Dewsnap

IP7\_028291

**From:** Howard Hamilton  
**To:** Pam Snyder; Phil Hailes  
**Date:** 12/24/2003 4:51:00 PM  
**Subject:** TEI Mobilization January 5, 2003

Talked to Tinker Steede and Darrell Steede of TEI and the following was discussed.

**1. Mobilization:**

- a. TEI will mobilizer on site Monday, January 5, 2004.

**2. Badges and vehicle passes.:**

- a. TEI will have 31 people on site the week of January 5, 2004. Most of them will arrive on site the first day.
- b. TEI faxed in a roster of the 31 employees they plan to have on site the week of 1/5/04.
- c. TEI's roster was given to Roslyn Hathaway (6907) on Tuesday 12/23/03.
- c. Roslyn will have construction badges ready for TEI when they arrive on site 1/5/03.
- d. TEI will have 4 to 6 vehicles that will need vehicle passes the week of 1/5/03.
- e. Everyone from TEI will need to report to Post 1 (Badge Alley) on Monday, January 5, 2003 first thing when they arrive on site. Security will issue construction badges and vehicle passes from Post 1 to TEI.

Note: Security will not be issuing photo badges to TEI.

- f. All TEI employees requiring a construction badge are to provide a photo identification. Security will match the photo to the employee before a badge is issued.

Note: TEI advises that before the outage is over they will need a total of 10 vehicle passes.

- g. All TEI vehicles that will require a vehicle pass will need to have registration papers. Security will not issue a vehicle pass without a current registration.

**3. Electrical Power:**

- a. Darrell Steede of TEI faxed in a letter on 12/23/03 outlying the power requirements TEI will need in Unit 2.
- b. A copy of this letter was placed in Kevin Millers in box on 12/24/23.
- c. Phil Hailes and I will meet with Kevin on 12/30/03 when he returns form the Christmas Holiday to physically go through the building and check on the power requirements provided for TEI.

Note: I will email Tinker with the results of this walk down on 12/30/03.

- d. Phil and I talked to Kevin on 12/22/03 prior to arrival of the TEI fax and was advised that the power supplied in Unit 1 last year is again being supplied this year in Unit 2.

- e. Staging of TEI's office trailer, tool trailer, change trailer and related equipment will be on the West side of Unit 2 next to the Turbine Building, which is different from last year when TEI staged this equipment South of the GSB Shop.
- f. There is a storage building located on the West side of Unit 2 that has power panels that will be used to supply power to the trailers and any equipment that TIE will stage in this area.
- g. Darrell was not sure of the exact power requirements for the trailers but thought that 200 amp of 220 volt power should take care of TEI's needs.
- h. IPSC electricians will make the tie-ins to the power panels when TEI arrives on 1/05/04 per TEI's requested needs.
- i. Kevin Miller at 6802 is the IPSC Electrical Planner to contact for this tie-in.
- j. Attached photos and site plan show the location of the storage building and area where TEI Trailers are to be staged.

#### **4. Safety:**

- a. I talked to Sylvan Lovell and advised him the TEI will be arriving on site 1/5/04.
- b. I advised Sylvan that Henry Hancock will be coming on site 1/5/03 when TEI mobilizes.
- c. Sylvan advises that Henry needs to get with him as soon as he can on Monday, January 5 and he will go over IPSC and TEI'S Safety Program with him. He will also see that Henry is given the IPSC Tagging Class and any other classes if required.
- d. Once Henry has met with Sylvan he will be able to conduct safety classes for TEI employees.
- e. TEI will need to make a roster of any classes conducted and see that this documentation is given to either Sylvan Lovell or Lorie Cloward.
- f. Sylvan advises that TEI has a copy of their safety program on file with IPSC Safety. Any changes or revisions to the manual need to be given to Sylvan so that he can update the program they have on file.

#### **5. Insurance:**

- a. I talked with Pat Finlinson (IPSC Risk Manager - 6565) and he advised that TEI is current on their insurance (Auto, liability, workman's comp) and that he has notified security that TIE is free to come on site.

#### **6. Post 3:**

- a. Post 3 has been notified that TEI will be bringing a forklift, welding machines, air tuggers and a bus on site 1/5/03.
- b. I gave a copy of the TEI 12/23/03 faxed letter calling out this equipment and advising that there will be more equipment to follow during the week.
- c. The Equipment for 1/5/03 has been authorized to come on site through Post 3.

Note: I called Jack Kessler on 12/24/03 and preauthorized the above.

- d. The extension at Post 3 is 6910 and the guards on day shift are Jack Kessler and MCabe Church.
- e. TEI will try to notify Post 3 a day or 1/2 day in advance of any equipment or material arrivals.

#### **7. Working Hours:**

- a. Darrell advised that TEI will be working 10 hours a day 6 days a week until the outage starts on 2/28/03 and then they will be working two twelve hour shifts 7 days a week.
- b. Darrell advised that TEI will be working 7:00 AM to 5:00 PM the week of 1/5/03.

#### **8. Phones**

- a. Darrel informed me that TEI will need six phone lines.
- b. I talked to Scott Rowley (6996) and was advised that there are 6 available phone lines for TEI's use.
- c. Reference attached photo and note the phone lines in question are located under a traffic cone West of Unit 2 just North of the Storage Building where TEI will be getting their power.
- d. Darrell stated that TEI is going to need long distance service.
- e. Contact Scott Rowley and he will hook up the phones to the trailers and make the necessary changes for TEI to receive long distance.

#### **9. Burner Salvage Area:**

- a. The 48 burners that will be taken out of the boiler in Unit 2 will need to be placed in Salvage.
- b. Attached Photo shows location of where Vance Bishop and Gary Gould have requested that the 48 old burners are to be placed.
- c. The burners are not to be stacked on top of each other, but placed next to each other so that IPSC can use a fork lift to directly lift any burner is so chooses.
- d. Burners are to be placed south of the existing salvaged materials. Note the transformer in the photo that marks the south end of the salvaged materials.
- e. The Salvage area is located East of Post 3, the material road post.

#### **10. Trash:**

- a. There is always a dumpster located on the West side of Unit 2 not far from the storage shed that will be supplying power to the TEI trailers.
- b. Operations can provide additional dumpsters if required.

#### **11. Unit 2 Boiler Access Hoists:**

- a. I will be checking out the controllers for the East and West Unit 2 boiler access hoists on Monday, January 5, 2004 for 120 days.

- b. TEI will be given the controllers and will therefor have control over the east and west boiler hoists.
- c. Contractors and IPSC will need to coordinate through TEI for moving materials in these access bays from January 5, 2004 through April 2004..
- d. I will get the controllers to Darrell on 1/5/04.
- e. The chargers for the controllers will be kept in the GSB Toolroom. There are spare batteries for the controllers and I understand that the controllers can go a long time without having to replace batteries.

**CC:** Alan Dewsnap; Bret Kent; Dave Hahn; dsteede@teiservices.com; Gary Goold; James Nelson; Jerry Finlinson; Jon Finlinson; Kevin Miller; Lorie Cloward; Pam Snyder; Pat Finlinson; Roslyn Hathaway; sal@advancedburner.com; Scott Rowley; Sylvan Lovell; tsteede@teiservices.com; Van Stewart; Vance Bishop



**From:** Howard Hamilton  
**To:** Phil Hailes  
**Date:** 2/10/2004 1:18:34 PM  
**Subject:** Vacuum Piping for Unit 2 Outage

Jeff Schena, Bret Wardle, Jim Roberts, Tiny and myself meet up in the boiler today at 10:30 am to go over the vacuum truck piping requirements for Cleaning the air heaters and boiler windboxes.

The basics of this meeting are as follows:

1. About 500 ft of hard piping will be needed for the windboxes front and rear this is on top of the 300 ft of hard piping that Onyx is bringing with them when they bring the vacuum truck.
2. Maintenance will review their requirements and provide what hard pipe they can for the windboxes.
3. Jeff will order the balance of the hard piping and all of the fittings required to pipe the air heater and windboxes.
4. Jim Roberts and Tiny from TEI gave Schena a list of the fittings they will need and Schena will see that they're brought when Onyx mobilizes.
5. Onyx will be down on Monday, February 23 bringing the vacuum truck, pipe and fittings to meet the requirements of the meeting held today.
6. Maintenance will bring over the hard piping they can spare on Monday, February 23.
7. TEI will place the vacuum piping in preparation for the Unit 2 outage which begins on Saturday, February 28.
8. Schena is to order enough flex hose to take care of the 700 ft that was requested today plus extra to take care of collapse and wear out.

**CC:** Bob Morris; James Nelson; Jeff Schena; ssteede@teiservices.com

**IP7\_028296**

**From:** Howard Hamilton  
**To:** Gary Judkins  
**Date:** 2/24/2004 12:52:46 PM  
**Subject:** Vacuum Piping to Unit 2 Boiler Penthouse.

Gary Judkins has requested that the vacuum piping TEI is using to vacuum the windboxes be left in position once TEI has completed vacuuming the windboxes.

Maintenance wants to tie into the windbox vacuum piping and extend it up to the penthouse on the 17th floor.

Maintenance is shooting to vacuum out the boiler penthouse on Wednesday (3/3/04) and Thursday (3/4/04).

I talked to Darrell Steed today and advised him of the above.

Darrell advises that Maintenance is free to tie into the windbox vacuum piping as soon as TEI is finished cleaning out the windboxes. This work should be completed by Monday, March 1.

Once Maintenance has completed vacuuming out the boiler penthouse they will see that the vacuum piping is disassembled.

It should be noted that the U2 access ways are going to be very busy both east and west. Maintenance will need to coordinate with TEI to make any lifts. Darrell feels that any material or equipment Maintenance needs to be lifted can be addressed quickly as long as TEI has a heads up.

I advised Gary that There will be two vacuum trucks from Onyx on site at the start of the outage. One is being rented by IPSC for 30 days and the other for 5 days. Once the windboxes are vacuumed the 5day rental will be taken off rent. Once the air heaters are vacuumed the 30 day rental is to be released to Maintenance. The release of both trucks should happen by Monday, March 1.

**CC:** Dale Hurd; James Nelson; Jeff Schena; Phil Hailes; ssteede@teiservices.com

**IP7\_028297**

**From:** Howard Hamilton  
**To:** Phil Hailes  
**Date:** 2/11/2004 2:59:57 PM  
**Subject:** Fwd: Update on Coal Valves 02/09/04

FYI

>>> Howard Hamilton 2/11/2004 2:57:33 PM >>>

Alan Dewsnap was able to get a detail drawing of the coal valve connection from B&W that should help clarify the coal valve work.

Jim, Alan and I meet with Alan on Monday (2/09/04) to give him a better idea of what is required by TEI concerning the installation of the coal valves after they have been removed.

Basic highlights of this meeting are as follows:

1. TEI is to place the coal valves so that Alan can inspect them on Monday Morning (02/09/04).
2. Alan will be inspecting the valve seat and the valve disk.
3. Alan will mark the valve seats and the valve disks that will need to be replaced on Monday (02/09/04).
4. Jim will see that the valve seats are wired to the coal valve so the Alan can easily view them.
5. There will be 96 valve seats on site for the outage so that all of the coal valves can have their valve seats replaced if required.
6. There are only 24 valve disks on site and if more are required to be replaced Maintenance will need to refurbish the work disks and get them back to TEI for placement.
7. Jim need only call Alan when he is ready for the gaskets, valve seats and valve disks required for this work. Alan will order them out of the Warehouse and have them placed on a pallet and delivered to TEI.
8. Alan will include several gallons of glue to assist in placing the gaskets.
9. Alan has staged 30 gallons of Hi-Temp RTV also. This RTV is to be used to place the VFD for the ABT Burners. This material can be delivered at the same time that the coal valve materials are brought to TEI.

Note that the SIN's attached show that some of the gaskets have yet to arrive.

**CC:** Alan Dewsnap; James Nelson

**IP7\_028298**

**From:** Howard Hamilton  
**To:** Will Lovell  
**Date:** 3/14/2006 7:09:11 AM  
**Subject:** Ceramic Vale Seats

Attach correspondence and photos should help in you determination concerning these vale seats.

**IP7\_028299**

**From:** Howard Hamilton  
**To:** Hugh Loukinas  
**Date:** 2/6/2004 5:07:58 PM  
**Subject:** Fwd: Damper Drive Rod - Too Short?

Give to Isely:

>>> Howard Hamilton 2/6/2004 5:06:02 PM >>>

Attached photos show the outer air damper will not open fully because the damper drive rod is 6" too short.

Please review and advise why the damper is not allowed to open up fully to 16".

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 4/26/2004 3:43:12 PM  
**Subject:** Re: ABT Back charges

Howard, lets go ahead and present these charges to ABT and let them know that we intend to apply these charges to the final payment to them. I'm sure we can provide them further documentation if they require it. thx Task the email you submit to them, through me please so I am ready to respond when they call. thx

>>> Howard Hamilton 4/26/2004 1:32:47 PM >>>

There are approximately \$26,170 worth of back charges against ABT for the installation of burners during the Unit 2 outage.

The attached table give a break down of the charges by work release and Purchase Order.

I did not put in TEI's final charges as you have the paper work for them. However, they should be close to the TEI estimates as shown.

**CC:** Phil Hailes

**IP7\_028301**

**From:** James Nelson  
**To:** joel  
**Date:** 3/11/2004 2:40:37 PM  
**Subject:** Re: Payment Release

As you are including the post-contract extras in your calculation for retention I believe we will be ok. I have approved payment on the \$817,385 and have both asked all plant personnel involved to hurry the payment as fast as possible and have requested and received a list of all approval entities in LADWP and IPA (those involved in cutting the check) so that I can call them to hasten the check's departure. I'm sorry that I have no means of overnighting payment, but I will do all that I can to move it along.

>>> "joel" <joel@advancedburner.com> 3/11/2004 9:36:55 AM >>>  
The invoice you have is correct. The payment schedule leaves the last 10%, \$247,122, to be paid after acceptance. to date you have not been withholding 10% of each invoice since the last payment is the retention.

If you withhold anything from the current invoice, the retention will be over the agreed upon 10%.

Note that my sum below was not correct (it was shown as \$2,240, 916), the correct amount is now listed: \$2,340,916.

If you then add the \$40,800 for the diffusers plus 30,000 for the second insurance payment plus the last material payment(retention) of 247,122 you reach the contract price.

The amount we are requesting now, \$817,385, is correct and no retention should be withheld from it since, as noted above, the retention is taken into account by agreement in the schedule of payments.

I hope this clarifies the situation and that you will overnight that amount to us today.

If there is still any question let's talk about it. I'm going out for lunch now but will be in the rest of the afternoon.

Joel

----- Original Message -----

From: "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>  
To: <[joel@advancedburner.com](mailto:joel@advancedburner.com)>  
Sent: Wednesday, March 10, 2004 6:09 PM  
Subject: Payment Release

> Joel:  
> Per the contract I've got to retain 10% of the contract price until  
> after startup. I'm not counting the adders in the 90% calc, however,  
> the allowable payment to get us to 90% of the contract amount by my

IP7\_028302

> numbers is \$672,359.50. Not the 741,365 you are showing on this  
> invoice. Also I'm not going to pay for the diffusers until I have them  
> all, but if you want to show the 40,800 for the burner material upgrade  
> and the 35,220 for the burner pitot upgrade I'll release both of those  
> immediately.

>  
> If you agree with the numbers above please fax me a corrected invoice  
> to 435-864-0764. thx

>  
> >>> "joel" <[joel@advancedburner.com](mailto:joel@advancedburner.com)> 3/10/2004 12:42:13 PM >>>

> James:

> The payments we have rec'd are:

> 11/21/03.....20% mat'l on order.....\$494,244.

> 12/9/02.....10% Gen'l arrangem'ts..... 247,122.

> 2/18/04.....30% Commence Fab..... 741,365

> Total paid to

> date.....1,482,731

>

> Current

> Inv:.....858,185

> This brings the total invoiced amount to \$2,340,916

> (Not including the extra for insurance)

>

> Therefore, if you are holding the 40,800 for the diffusers, the amount  
> we

> ask that you send immediately is \$817,385.

>

> There has been no incorrect or double billing.

> Please confirm that we are in agreement on this.

>

> Thanks,

> Joel

>

>

>

>

>

>

>

> ----- Original Message -----

> From: "joel" <[joel@advancedburner.com](mailto:joel@advancedburner.com)>

> To: "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>

> Cc: "Sal Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)>

> Sent: Wednesday, March 10, 2004 10:53 AM

> Subject: Re: Re:

>

>

> > The invoice ou are holding is for the 30% on shipment, issued  
> 2/18/04,

> plus

> > the additional items.

> >

> > The earlier payment for 741,365(also 30%) was correct and received

> on

> 2/18.

> >

IP7\_028303



> > The invoice you have is correct and the amount you owe is the  
> \$741,365 for  
> > final shipment.  
> >  
> > Would appreciate if you could overnight that check.  
> >  
> > Thanks,  
> > Joel  
> >  
> >  
> > ----- Original Message -----  
> > From: "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>  
> > To: <[joel@advancedburner.com](mailto:joel@advancedburner.com)>  
> > Sent: Wednesday, March 10, 2004 11:33 AM  
> > Subject: Re:  
> >  
> >  
> > > As I looked into this it turns out that the major portion of  
> invoice  
> > > A03008-5 (\$741,365) has already been paid to you on 2/13/04. I  
> have  
> > > released two of the remaining three items (\$76,020). The last  
> item,  
> > > (40,800) is additional charge for the diffusers; When we get the  
> last of  
> > > the diffusers on Monday I will release that for payment also. jhn  
> > >  
> > > > "joel" <[joel@advancedburner.com](mailto:joel@advancedburner.com)> 3/9/2004 11:03:18 AM >>>  
> > > James:  
> > >  
> > > Considering how we are progressing with shipping the remaining  
> > > equipment I am asking you to release the check you are holding.  
> > >  
> > > Whether you pay us now or not, we would still do everything  
> possible to  
> > > ship ASAP; as we are doing.  
> > >  
> > > Withholding that payment achieves only one effect: it creates a  
> major  
> > > cash-flow problem for us.  
> > >  
> > > So I would appreciate it if you would have it overnighted to us.  
> > >  
> > > Joel  
> > >  
> >  
>  
>

CC: Howard Hamilton

IP7\_028304

**From:** "joel" <joel@advancedburner.com>  
**To:** "James Nelson" <JIM-N@ipsc.com>  
**Date:** 3/11/2004 2:45:48 PM  
**Subject:** Re: Payment Release

Thanks, James, I appreciate that.

I'll have our FEDEX account number sent to your office tomorrow. they have overnighted checks to us before.

Joel

----- Original Message -----

From: "James Nelson" <JIM-N@ipsc.com>  
To: <joel@advancedburner.com>  
Cc: "Howard Hamilton" <howard-h@ipsc.com>  
Sent: Thursday, March 11, 2004 4:40 PM  
Subject: Re: Payment Release

> As you are including the post-contract extras in your calculation for  
> retention I believe we will be ok. I have approved payment on the  
> \$817,385 and have both asked all plant personnel involved to hurry the  
> payment as fast as possible and have requested and received a list of  
> all approval entities in LADWP and IPA (those involved in cutting the  
> check) so that I can call them to hasten the check's departure. I'm  
> sorry that I have no means of overnighting payment, but I will do all  
> that I can to move it along.

>  
>  
>

> >>> "joel" <joel@advancedburner.com> 3/11/2004 9:36:55 AM >>>  
> The invoice you have is correct. The payment schedule leaves the last  
> 10%,  
> \$247,122, to be paid after acceptance. to date you have not been  
> withholding 10% of each invoice since the last payment is the  
> retention.

>

> If you withhold anything from the current invoice, the retention will  
> be  
> over the agreed upon 10%.

>

> Note that my sum below was not correct (it was shown as \$2,240, 916),  
> the  
> correct amount is now listed: \$2,340,916.

>

> If you then add the \$40,800 for the diffusers plus 30,000 for the  
> second  
> insurance payment plus the last material payment(retention) of 247,122  
> you  
> reach the contract price.

>

IP7\_028305

> The amount we are requesting now, \$817,385, is correct and no  
> retention  
> should be withheld from it since, as noted above, the retention is  
> taken  
> into account by agreement in the schedule of payments.

>  
> I hope this clarifies the situation and that you will overnight that  
> amount  
> to us today.

>  
> If there is still any question let's talk about it. I'm going out for  
> lunch  
> now but will be in the rest of the afternoon.

>  
> Joel

>  
>  
>  
> ----- Original Message -----  
> From: "James Nelson" <JIM-N@ipsc.com>  
> To: <joel@advancedburner.com>  
> Sent: Wednesday, March 10, 2004 6:09 PM  
> Subject: Payment Release

>  
>  
> > Joel:  
> > Per the contract I've got to retain 10% of the contract price until  
> > after startup. I'm not counting the adders in the 90% calc,  
> > however,  
> > the allowable payment to get us to 90% of the contract amount by my  
> > numbers is \$672,359.50. Not the 741,365 you are showing on this  
> > invoice. Also I'm not going to pay for the diffusers until I have  
> > them  
> > all, but if you want to show the 40,800 for the burner material  
> > upgrade  
> > and the 35,220 for the burner pitot upgrade I'll release both of  
> > those  
> > immediately.

> >  
> > If you agree with the numbers above please fax me a corrected  
> > invoice  
> > to 435-864-0764. thx

> >  
> > >>> "joel" <joel@advancedburner.com> 3/10/2004 12:42:13 PM >>>  
> > James:

> > The payments we have rec'd are:  
> > 11/21/03.....20% mat'l on order.....\$494,244.  
> > 12/9/02.....10% Gen'l arrangem'ts..... 247,122.  
> > 2/18/04.....30% Commence Fab..... 741,365  
> > Total paid to  
> >  
> > date.....1,482,731  
> >  
> > Current  
> > Inv:.....858,185

>> This brings the total invoiced amount to \$2,340,916  
>> (Not including the extra for insurance)  
>>  
>> Therefore, if you are holding the 40,800 for the diffusers, the  
> amount  
>> we  
>> ask that you send immediately is \$817,385.  
>>  
>> There has been no incorrect or double billing.  
>> Please confirm that we are in agreement on this.  
>>  
>> Thanks,  
>> Joel  
>>  
>>  
>>  
>>  
>>  
>> ----- Original Message -----  
>> From: "joel" <joel@advancedburner.com>  
>> To: "James Nelson" <JIM-N@ipsc.com>  
>> Cc: "Sal Ferrara" <sal@advancedburner.com>  
>> Sent: Wednesday, March 10, 2004 10:53 AM  
>> Subject: Re: Re:  
>>  
>>  
>>> The invoice ou are holding is for the 30% on shipment, issued  
>> 2/18/04,  
>> plus  
>>> the additional items.  
>>>  
>>> The earlier payment for 741,365(also 30%) was correct and  
> received  
>> on  
>> 2/18.  
>>>  
>>> The invoice you have is correct and the amount you owe is the  
>> \$741,365 for  
>>> final shipment.  
>>>  
>>> Would appreciate if you could overnight that check.  
>>>  
>>> Thanks,  
>>> Joel  
>>>  
>>>  
>>> ----- Original Message -----  
>>> From: "James Nelson" <JIM-N@ipsc.com>  
>>> To: <joel@advancedburner.com>  
>>> Sent: Wednesday, March 10, 2004 11:33 AM  
>>> Subject: Re:  
>>>  
>>>  
>>>> As I looked into this it turns out that the major portion of

> > invoice  
> > > A03008-5 (\$741,365) has already been paid to you on 2/13/04. I  
> > have  
> > > released two of the remaining three items (\$76,020). The last  
> > item,  
> > > (40,800) is additional charge for the diffusers; When we get the  
> > last of  
> > > the diffusers on Monday I will release that for payment also.  
> jhn  
> > >  
> > > >>> "joel" <joel@advancedburner.com> 3/9/2004 11:03:18 AM >>>  
> > > James:  
> > >  
> > > Considering how we are progressing with shipping the remaining  
> > > equipment I am asking you to release the check you are holding.  
> > >  
> > > Whether you pay us now or not, we would still do everything  
> > possible to  
> > > ship ASAP; as we are doing.  
> > >  
> > > Withholding that payment achieves only one effect: it creates a  
> > major  
> > > cash-flow problem for us.  
> > >  
> > > So I would appreciate it if you would have it overnighted to us.  
> > >  
> > > Joel  
> > >  
> > >  
> >  
> >  
>  
>

**CC:** "Howard Hamilton" <howard-h@ipsc.com>

**IP7\_028308**

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 2/3/2004 8:11:40 AM  
**Subject:** Fwd: ABT burner thermocouples and tubing welds

We need to let ABT know right away that the tubing welds/brazes are very poor and need immediate improvement. drop by.

>>> Jerry Finlinson 2/2/2004 1:56:02 PM >>>

Sal,

Now that we have the new burners on site, we see how to install the thermocouples. The tubes are pre installed and we slide the thermocouples down the tubes. The one at the burner tip has some bends near the end. I hope that the thermocouple is able to go around those bends, otherwise it won't make it to the end of the tube.

On the pitot tube manifold, the tubing bends look nice, but they appeared to use brass T's instead of stainless T's and the welding job looks poor. See attached photo. What can you do to improve that? Leaks there will cause errors in our air flow measurement, so we need these to be good welds. It will be difficult to access inside the duct for repairs.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

IP7\_028309

# ADVANCED BURNER TECHNOLOGIES

271 Route 202/206

P.O. Box 410

Pluckemin, New Jersey 07978

Phone: 908-470-0470; FAX: 908-470-0479

## DRAWING TRANSMITTAL

**TO:** ISSUE

**FROM:** CHUCK ONAITIS

**DATE:** 3/10/2004

CODE	DRAWING NUMBER	REV	DRAWING TITLE
3 5	03008-800-A06-0	-	WINDBOX BAFFLES ARRANGEMENT
3 5	03008-800-A06-D01	-	WINDBOX INLET BAFFLES "F"
3 5	03008-800-A06-D04	-	WINDBOX BAFFLES "D & E"
3 5	03008-800-A06-D05	-	WINDBOX BAFFLES "C"
3 5	03008-800-A06-D06	-	WINDBOX BAFFLES "A&B"
3 5	03008-800-A06-D07	-	TYP TOP AND BOTTOM SUPPORT BRACE

## CODE

- 1 FOR REVIEW
- 2 FOR ISSUE
- 3 FOR INFORMATION
- 4 FOR COMMENT
- 5 FOR MANUFACTURE
- 6 OTHER

D:\IGS03\IGS03-04 Unit 2 Burners(03-96033-00)\email and Faxes\James Nelson\Baffels\IPSC  
3-10-04.doc

**IP7\_028310**

**From:** James Nelson  
**To:** Howard Hamilton; Phil Hailes  
**Date:** 3/10/2004 4:16:43 PM  
**Subject:** Fwd: Payment Release

>>> James Nelson 3/10/2004 4:09:44 PM >>>

Joel:

Per the contract I've got to retain 10% of the contract price until after startup. I'm not counting the adders in the 90% calc, however, the allowable payment to get us to 90% of the contract amount by my numbers is \$672,359.50. Not the 741,365 you are showing on this invoice. Also I'm not going to pay for the diffusers until I have them all, but if you want to show the 40,800 for the burner material upgrade and the 35,220 for the burner pitot upgrade I'll release both of those immediately.

If you agree with the numbers above please fax me a corrected invoice to 435-864-0764. thx

>>> "joel" <[joel@advancedburner.com](mailto:joel@advancedburner.com)> 3/10/2004 12:42:13 PM >>>

James:

The payments we have rec'd are:

11/21/03.....20% mat'l on order.....\$494,244.

12/9/02.....10% Gen'l arrangem'ts..... 247,122.

2/18/04.....30% Commence Fab..... 741,365

Total paid to

date.....1,482,731

Current Inv:.....858,185

This brings the total invoiced amount to \$2,240,916

(Not including the extra for insurance)

Therefore, if you are holding the 40,800 for the diffusers, the amount we ask that you send immediately is \$817,385.

There has been no incorrect or double billing.  
Please confirm that we are in agreement on this.

Thanks,  
Joel

----- Original Message -----

From: "joel" <[joel@advancedburner.com](mailto:joel@advancedburner.com)>

To: "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>

Cc: "Sal Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)>

Sent: Wednesday, March 10, 2004 10:53 AM

Subject: Re: Re:

> The invoice ou are holding is for the 30% on shipment, issued 2/18/04,

IP7\_028311



plus  
> the additional items.  
>  
> The earlier payment for 741,365(also 30%) was correct and received on 2/18.  
>  
> The invoice you have is correct and the amount you owe is the \$741,365 for final shipment.  
>  
> Would appreciate if you could overnight that check.  
>  
> Thanks,  
> Joel

>  
> ----- Original Message -----  
> From: "James Nelson" <JIM-N@ipsc.com>  
> To: <joel@advancedburner.com>  
> Sent: Wednesday, March 10, 2004 11:33 AM  
> Subject: Re:

>  
>  
>> As I looked into this it turns out that the major portion of invoice  
>> A03008-5 (\$741,365) has already been paid to you on 2/13/04. I have  
>> released two of the remaining three items (\$76,020). The last item,  
>> (40,800) is additional charge for the diffusers; When we get the last of  
>> the diffusers on Monday I will release that for payment also. jhn  
>>  
>>>> "joel" <joel@advancedburner.com> 3/9/2004 11:03:18 AM >>>  
>> James:  
>>  
>> Considering how we are progressing with shipping the remaining  
>> equipment I am asking you to release the check you are holding.  
>>  
>> Whether you pay us now or not, we would still do everything possible to  
>> ship ASAP; as we are doing.  
>>  
>> Withholding that payment achieves only one effect: it creates a major  
>> cash-flow problem for us.  
>>  
>> So I would appreciate it if you would have it overnighed to us.  
>>  
>> Joel  
>>  
>

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 3/10/2004 2:50:01 PM  
**Subject:** Fwd: Windbox baffle drawings

>>> "Chuck Onaitis" <chuck@advancedburner.com> 3/10/2004 2:08:48 PM >>>

Attached are the windbox baffle arrangement drawings. These drawings define the location and general construction of the baffles. Modifications, other than moving the baffles, may be made to suit the conditions in the windbox.

Any questions please call me at 908-470-0722 or after 5:00 Eastern I can be reached at 610-330-9916.

Chuck Onaitis

**IP7\_028313**

**From:** James Nelson  
**To:** joel@advancedburner.com; peter@pcwfab.com; sal@advancedburner.com; tarkel@advancedburner.com  
**Date:** 1/30/2004 2:39:25 PM  
**Subject:** Burner damage as received at Intermountain

Peter,

I appreciate your response in dealing with the shipping restraint issues.

As you will note in the attached photos the shipping supports on three or four of the first eight burners delivered were buckled under. The damage to the respective plates appears to be only slight. Also at least two of the outer damper actuation rods are bent at the front. ( in the area of the threads). Other contact damage appears at first glance to be slight also.

Joel, Sal, Tarkel:

I spoke with tarkel moments ago. I appreciate Tarkel and Joel getting things underway to address the issue. You are all welcome to inspect them personally at any time you choose. Unless we notify you otherwise we would intend to have TEI correct the problems and settle up with ABT for the cost of repairs. Please let me know of any issues that need to be addressed in order for the corrections to the burners to be made on site.

Please provide any specific guidance you feel would be required in correcting the issues as we have described them and as shown in the attached photographs. We will certainly contact you if we feel we need any guidance in the course of repair.

We will notify you if Howard finds anything more significant with a thorough inspection on Monday. We will get TEI to give a number to repair the affected burner components and let you know what the work will entail.

**CC:** Howard Hamilton

**IP7\_028314**

**From:** James Nelson  
**To:** Howard Hamilton; Salvatore Ferrara  
**Date:** 2/20/2004 10:17:24 AM  
**Subject:** RE: Donut for Lighters

This may explain the ignitor hole size but why are the other penetrations so large? Also in the future we need to know the impact of any information you lack. We will always try our best respond if we understand the impact and the time frame.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/20/2004 8:49:15 AM >>>

Howard,

We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Wednesday, February 18, 2004 11:39 AM

To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Cc: [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); James Nelson; Phil Hailes;

[ssteede@teiservices.com](mailto:ssteede@teiservices.com)

Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**CC:** Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com)

**IP7\_028315**

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 2/20/2004 10:28:50 AM  
**Subject:** Fwd: RE: Donut for Lighters

What is the recommended clearance for these penetrations? Yes we should probably get a quote from darrell to add these rings.

>>> Howard Hamilton 2/20/2004 9:02:18 AM >>>

Will this be and extra to TEI to make the rings? Also with a donut there will be two welds instead of one the outer weld on the ring should be and extra?

Is this work backchargable to ABT?

Please advise as TEI should make the donuts next week and I will need to issue a work release asap.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/20/2004 8:49:15 AM >>>

Howard,

We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Wednesday, February 18, 2004 11:39 AM

To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Cc: [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com); James Nelson; Phil Hailes;

[ssteede@teiservices.com](mailto:ssteede@teiservices.com)

Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**IP7\_028316**

**From:** James Nelson  
**To:** Howard Hamilton; ssteede@teiservices.com  
**Date:** 2/17/2004 1:59:29 PM  
**Subject:** Fwd: Operations Release Date

Just to clarify. The contract states that in order to receive the entire bonus, the unit must be released to Operations by 7:00 am on March 23. The bonus will be prorated thereafter until 7:00 am on March 25th when there will be no bonus paid. The liquidated damages do not begin until end of shift on the on the 26th when all work cards must be turned in. Let me know if there are any questions on how this reads in the contract. thanks

>>> Howard Hamilton 2/17/2004 1:29:50 PM >>>

The "Operations Release Date" is March 23, 2004 at 7:00 AM not the date shown below that was sent out earlier.

>>> Howard Hamilton 2/17/2004 10:19:02 AM >>>

I have talked to James Nelson and have been advised the that the "Operations Release Date" is March 3, 2004 at 7:00 AM.

This is the date that determines whether TEI gets a bonus for beating the schedule or a penalty for not meeting the schedule.

To avoid a penalty TEI must have the burners operational on or before this date.

**IP7\_028317**

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 12/31/2003 2:19:06 PM  
**Subject:** Re: Burner Gaskets

The contract states that they will provide these things. Why are we giving them an out? Drop by when you can.

>>> Howard Hamilton 12/31/2003 1:57:55 PM >>>

Will ABT be providing the gasket and fasteners between the existing IPSC 90 degree elbow and burner pup that includes the ABT flow distribution device which are being fabricated by an ABT vendor and being sent separate from the burners.

If not please advise the gasket and fastener hardware required to make this connection. Reference drawing 03008-100-A00-D0 (Sections A-A and B-B).

**From:** James Nelson  
**To:** Howard Hamilton; Phil Hailes  
**Date:** 1/12/2004 3:05:09 PM  
**Subject:** RE: Contract 04-45606, Burner Model

I vote no, unless this steel has been kept in space since it was rolled.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 1/12/2004 1:52:40 PM >>>  
Howard/Phil,

The cost to shrink wrap the burner modules (to cover all openings on each end of the burner) would be a total of \$18,700 for all 48 assemblies. Please advise by 1/14/04 should you wish to proceed with this change so we have sufficient time to order materials and install in time for the first shipments.

Regards,  
Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]  
Sent: Wednesday, December 17, 2003 5:22 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com); Phil Hailes  
Cc: Gary Goold; James Nelson  
Subject: Re: Contract 04-45606, Burner Model

Phil: Be advised that Steve Kozocowich of ABT called me and requested to know how much of the burner we would like to see shrink wrapped. I advised him that we would want the areas of the burner wrapped that ABT would require to have the burners stored outside. I would image this would be mostly around the front plate of the burner where all of the instruments are to be located.

It would appear that ABT will want to charge us for this wrapping. If they send a quote to me I will make sure that you get a copy. If the price is right it should be implemented as it will give us the option of storing the burners outside, which could be very advantageous. Plus it would provide protection to the vulnerable areas of the burner during shipping and wherever they are staged.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 12/17/2003 12:53:53 PM  
>>>  
Howard,

I received a message that you called and asked if we can provide shrink wrap on the burner. Which components would you like to see shrink wrapped (knowing this I can obtain a fixed price from our fabricator to apply the shrink wrap accordingly).

Sal

IP7\_028319



**From:** James Nelson  
**To:** Bernell Warner; Bret Kent; Dave Hahn; Dean Wood; Howard Hamilton; Phil Hailes; Phong Do  
**Date:** 1/7/2004 8:59:09 AM  
**Subject:** Re: Contract Cost Tracker W/O

We will discuss this issue in our group meeting. We need to have the IPSC project coordinator directly involved in distribution of IPSC materials from our stores for several reasons.

>>> Phil Hailes 1/6/2004 6:02:25 PM >>>  
Howard and Bret,

I gave the warehouse my contract cost tracker number (02-60456-54) for tracking the charges that TEI will make to the warehouse (ice, rags, nuts and bolts, etc) **that are attributable to the OFA job.** I use a specific extension to the base W/O number, so that I can follow and summarize the costs to back-charge TEI at the end of the job. By the end of the outage, these costs add up to several thousands of dollars.

Can each of you give them the appropriate W/O for burners and air heater work?

My intent is that anything TEI attempts to get from the warehouse and tool room be attributed to each individual contract by uttering the keywords of "OFA" or "Burners" or "Air Heater". This will help the warehouse people know which contract to charge, will help keep the costs straight and allow us to track what was used.

Vance and Garry,

I would also like to arrange things with the Tool Room so that one or two key TEI people (eg. Superintendents) can check out tools as needed, without us having to personally sign them out each time. Can this be worked out?

Thanks Phil

**CC:** Gary Goold; Vance Bishop

**IP7\_028320**

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 1/27/2004 1:28:21 PM  
**Subject:** Re: Questions Concerning Item 10 on Drawing 03008-100-A02-D0

I applaud your attention to important detail Howard. You are truly the right man for this job. Let me know if I can support you in any way. i.e. if ABT gives you any crap. thanks again.

>>> Howard Hamilton 1/26/2004 4:23:18 PM >>>

1. B&W drawing 294359E calls for the hole in the windbox to accommodate the burners to have a diameter of 78 1/4". ABT Drawing 03008-100-A02-D0 calls out item 10 to be a carbon steel (A36) bar hoop 78 1/4" ID, 2 3/4" wide and 1/4" thick. This means that the only overlay onto the windbox that ABT is depending on is the 1/4" thickness of the hoop (OD 78 3/4").

This appears to be a very close shave considering if the burner has to be moved up down or side ways more than 1/4" the hoop and the hole will have a gap that will need to be addressed.

My Question is what happens if a sizable gap (say 1/2") is unavoidable between hoop and windbox?

Response:

2. In Detail C on Drawing 03008-100-A02-D0 ABT has shown that a 3/16" fillet seal weld is required between Item 10 and the windbox. Since both material are A36 we can figure a required welding procedure.

In Detail C on Drawing 03008-100-A02-D0 ABT has shown a 3/16" fillet seal weld between item 10 and the ABT burner front plate. The drawing calls out item 10 to be A36, but the front plate is not addressed.

What is the front plate made out of?

Response:

What is the P-number and ASME designation for the burner front plate.

Response:

Response:

What welding rod does ABT recommend and is preheat or post heat required?

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 1/27/2004 11:13:23 AM  
**Subject:** Re: Questions concerning item 11 on drawing 03008-100-A02-D0

Howard,  
We paid extra to have forward sections of the burners made of alloy. Check with Phil if necessary to see that proper alloys are used. thx

>>> Howard Hamilton 1/27/2004 11:09:04 AM >>>

1. Item 11 on drawing 03008-100-A02-D0 is made out of A36 steel. This same casing ring on B&W's existing burner is made out of stainless steel TP 304.

Why can ABT use mild steel ?

Response.

2. Attached photo shows that there is a sizeable gap between Item 11 and the burner throat. B&W placed Kaowool rope packing to seal this gap in the existing burners.

Does ABT require that this gap be sealed and if not, why and if so with what?

Response:

3. Item 11 is called out as "shipped with unit" in its description on drawing 03008-100-A02-D0. This would indicate that it is shipped loosed or only tack welded to the burner as item 10 is called out to be in removal and installation note 8.

Is Item 11 unattached to the burner throat during operation allowing the burner to expand and contract without restriction?

Response:

Is Item 11 welded to the burner throat or just tack welded?

Response:

If Item 11 is only tack welded to the burner throat do these tacks need to be broken to allow burner movement?

Response:

4. Item 11 is not called out in the Removal and Installation Notes.

Does ABT have a recommended sequence for the welding of Item 11.

Response:

5. In B&W drawing 294359E the throat sleeve casing (Item e) is shown welded to the casing weld ring which is welded to the boiler wall tubes.

Is item 11 welded to the throat sleeve casing (Item e) or the casing weld ring?

Response:

Does ABT require that the throat sleeve casing (Item e) be cut flush with the casing weld ring so that item 11 can be welded to the casing weld ring?

Response:

**CC:** Phil Hailes

**From:** Howard Hamilton  
**To:** James Nelson  
**Date:** 2/20/2004 8:01:46 AM  
**Subject:** Re: Removal of Sprinkler Piping

TEI asked to see if the piping could be removed. It will be in the way of rigging the old burners out and the new burners in. It could be worked around but with the flurry of activity going on I'm sure it would be damaged. Best to have it removed.

>>> James Nelson 2/19/2004 3:59:36 PM >>>

If this is going to be an interference issue for Safeway or TEI, I'm confident we could get special permission to do it the day before. Let me know.

>>> Howard Hamilton 2/19/2004 3:12:30 PM >>>

I talked to Sylvan Lovell this morning and asked if it would be possible to remove the burner front sprinkler piping for the front and rear of the boiler.

Sylvan advised that he needs to take a closure look but at first blush it would appear that Safety would be able to remove the sprinkler piping.

Sylvan stated that if he decides that the sprinkler piping could be removed he will have his people do it Saturday morning February 28, 2004.

The attached photos show the piping in question.

**IP7\_028324**

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 12/31/2003 3:04:53 PM  
**Subject:** Re: Revised General Arrangement Drawings

I really appreciate your detailed attention to the installation issues.

>>> Howard Hamilton 12/31/2003 1:35:04 PM >>>  
Attached ABT Unit 2 General Arrangement Drawings 03008-100-A01-FW and  
03008-100-A01-RW have the following requested revisions marked in red:

1. Each burner has been assigned an IPSC Burner Number as presently exists in Unit 2.
2. The drawing have been marked with a RHSW (Right Hand Side Wall) and a LHSW (Left Hand Side Wall) designation for orientation.
3. An arrow pointing to the West has also been added for orientation.
4. The following statements have been added also for orientation.

"Standing Outside The Boiler Looking South or into The Boiler" - for the Rear Wall

"Standing Outside The Boiler Looking North or into The Boiler" - for the Front Wall

I talked to Sal on the phone on 12/30/03 and discussed the following:

1. The burners will come out marked CW or CCW only. as we discussed earlier this month. Since the burner fronts will be covered with insulation and lagging it would be pointless to mark them with the numbers called out on the drawings.
2. The burners will have no other markings such a serial or model number that will make them unique.
3. The numbering called out on the attached drawings are unique to each burner.
4. Showing the numbering on the arrangement drawings will assist in identifying a specific burner and assist in future reference.

**IP7\_028325**

**From:** James Nelson  
**To:** Howard Hamilton  
**Date:** 2/4/2004 3:19:41 PM  
**Subject:** Re: Shipping Update 02/04/04

Again Howard. I continue to appreciate your attention to detail. Please, however, remember to take at least 20% of your day to think about and deal with the issues out in front of the project, safety issues in advance of work and coordination issues with others. Don't let yourself get totally immersed in the moment to the exclusion of the essential and constant look ahead. thanks for your dedication.

>>> Howard Hamilton 2/4/2004 1:18:58 PM >>>

1. Fifth Load - As of 1300 the truck is in Illinois. Trucker Charles Barnett advises that he will most likely arrive at IPSC Saturday. He will call Friday Morning to confirm with TEI.

2. Sixth Load - Will be picked up this afternoon from Passaic County Welders. Pacer has an eta of Monday (02/09/04).

Note: The sixth load will be carrying the ACME rod replacement for the damper drives that were damaged during shipment.

3. Seventh Load - Passaic County Welders have advised Pacer to pick up the 7th load of burners on Thursday Morning. Pacer is looking to have a trucker there Thursday afternoon or Friday Morning.

Note: This will be the first load of CCW Burners.

4. Eighth Load - Passaic County Welders has advised Pacer to pick up the 8th load on Friday afternoon.

**IP7\_028326**

**From:** James Nelson  
**To:** Bernell Warner  
**Date:** 1/13/2004 8:06:12 AM  
**Subject:** Re: something else about the meeting tomorrow

Sounds fine to me. I probably won't be able to make it to the meeting but it appears you will have plenty of contributors. Please make sure that Maintenance and I&C (or whomever the safety work order was written for) agrees that the approach taken will satisfy the safety need. I still question why this is even a safety issue. Please try to get an answer for me on that. thanks

>>> Bernell Warner 1/13/2004 7:55:24 AM >>>

HH ask today if TCI could come to the meeting. They have another way to Go through the North Side of the boiler. I am going up with HH this morning to see where it is.

**CC:** Craig Stumph; Howard Hamilton

**IP7\_028327**



**From:** Jeff Schena  
**To:** Ralph Newberry  
**Date:** 2/11/2004 11:30:07 AM  
**Subject:** Req. 200071, Vacuum Truck Rental

Ralph, Req. 200071 has been entered against Work Order 03-96033-0, Cap. Project for Burner replacement. the req. amount is an estimate based on 5 days rental, give or take a couple of days. I had a conversation with Jim Hartley with Onyx and he indicated that this would be no problem for them. This truck will be used in conjunction with the truck rented on P.O. 04-36849.

Jim came down and walked down the job with Howard Hamilton, TEI, and myself. He agreed to send down the piping and fittings on the 23rd of Feb. so that the piping runs can be setup early to expedite the start of work at the beginning of the outage. TEI has requested, through Howard Hamilton, that the trucks be here ready for service the 28th day of Feb. at 7:00 PM. Jim also indicated that this would not be a problem. Call me if you need any more info, thanks for your help.

Jeff  
ext. 6804

**CC:** Howard Hamilton; James Nelson; Phil Hailes

**IP7\_028328**

**From:** Jeff Schena  
**To:** Howard Hamilton  
**Date:** 2/23/2004 6:56:30 AM  
**Subject:** ONYX INDUSTRIAL ( GUZZLER PIPING )

Howard, Brian with Onyx Industrial left me a voice mail indicating his men would be here today Mon. the 23rd at about 9:00 AM to deliver and help set up the piping for the burner fronts. Please give me a call to talk about badging, and safety training for these men. Thanks

Jeff  
ext. 6804

**CC:** Phil Hailes

**IP7\_028329**

**From:** Jeff Schena  
**To:** Roslyn Hathaway  
**Date:** 2/26/2004 9:18:30 AM  
**Subject:** Onyx Industrial

Here is a list of names and equipment numbers that should arrive on site Fri. the 27TH. Ben Adams, Donald Grover, Joaquin Cordero, Omar Mandujano. The equipment numbers are as follows, VAC TRUCK #2238, AND 2236, PICKUP 2411 and 2361. They should be arriving some time in the afternoon to set up and test their equipment.

**CC:** Dale Hurd; Howard Hamilton; James Nelson; Phil Hailes

**From:** Jerry Finlinson  
**To:** william.m.clark@us.abb.com  
**Date:** 2/20/2004 2:16:52 PM  
**Subject:** Regarding insertion depth of ABB Scanners?

William,

We have questions about the flame scanner guide pipe insertion depth. Presumably you designed the scanner tip to be in a certain location. Can you send us a drawing showing what that insertion depth is? Right now when the dampers are closed the scanner tip is about 10 inches behind the damper. See attached photo.

Also we haven't yet received the packing glands. Jim have you shipped those already. Are they in with the scanner guide pipes?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <william.m.clark@us.abb.com> 2/20/2004 10:38:58 AM >>>

Jerry,

We see many methods, the preference would be a flexible 2" hose for serviceability and to allow for boiler expansion.

I have enclosed a drawing to show a hose arrangement we have supplied historically.

Regards,

William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

IP7\_028331

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/20/2004 12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry Dohalick/USINY/ABB@ABB\_US01, William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to your scanner cooling port.  
Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>  
Attached photos explain request for clarification concerning how ABB will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing 2" flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this note on February 20 2004 by William M. Clark/USPOA/ABB

**IP7\_028332**

Attention: Attachment "Existing Scanner..jpg" has been removed from  
this  
note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)

(See attached file: B949738-Model.pdf)

**CC:**           harry.dohalick@us.abb.com; Howard Hamilton; James Clark; James Nelson;  
Jim Knapp; Phil Hailes

**IP7\_028333**

**From:** Jerry Finlinson  
**To:** Howard Hamilton; James Nelson; Phil Hailes  
**Date:** 2/23/2004 11:17:52 AM  
**Subject:** Fwd: Re: Regarding insertion depth of ABB Scanners?

FYI,  
Bill Clark of ABB says that even with our 9 degree lenses on the scanner tubes he expects a 10 to 13 inch recess of the scanner lens behind the turning vanes to be about right. So I'll get a packing gland from the warehouse, install it and see where it fits.  
Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <william.m.clark@us.abb.com> 2/23/2004 10:57:22 AM >>>

Jerry,

Yes, 9 Degree is what you have the text in the previous note is still correct for the application. A 10" to 13" recess behind the vanes would not impact the viewing area for the 9 degree lens.

Bill

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/23/2004 12:42 PM

02/23/2004 12:42 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: William M. Clark/USPOA/ABB@ABB\_US01  
cc:  
Subject: Re: Regarding insertion depth of ABB Scanners?

Bill,  
I was under the impression from Mike Tolar, that we'd probably have 9 degree lenses on our scanners. Are you sure that we have 3 degree ones?

IP7\_028334

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/23/2004 9:07:46 AM >>>

Jerry,

I have discussed the location and depth with both the Product Manager Jim Niziolek and the Design Engineer Paul Chase. Both concur that the scanner recessed approximately 10" behind the closed damper vanes would be adequate to view the flame. Since we are utilizing a 3 degree viewing lens, the viewing spot size changes very slightly in this area.

Assumptions are that the final dimension will be between 10" to 13" behind the closed damper vane with the packing gland installed and that the center point through the vane opening will be unobstructed.

We do not have a drawing which depicts a burner depth. We have made our recommendations concerning scanner location. The final burner / scanner location drawing should be in the ABT scope.

Regards,

William M. Clark  
ABB Inc.  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

**IP7\_028335**



Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
04:16 PM

02/20/2004 04:16 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: William M. Clark/USPOA/ABB@ABB\_US01

"Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "Jim Knapp"  
<[JIM-KNAPP@ipsc.com](mailto:JIM-KNAPP@ipsc.com)>,  
"James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>, "Phil Hailes" <[Phil-H@ipsc.com](mailto:Phil-H@ipsc.com)>,  
Harry  
Dohalick/USINY/ABB@ABB\_US01, James M. Clark/USIMS/ABB@ABB\_US01  
Subject: Regarding insertion depth of ABB Scanners?

William,  
We have questions about the flame scanner guide pipe insertion  
depth. Presumably you designed the scanner tip to be in a certain  
location. Can you send us a drawing showing what that insertion  
depth  
is? Right now when the dampers are closed the scanner tip is about 10  
inches behind the damper. See attached photo.

Also we haven't yet received the packing glands. Jim have you shipped  
those already.  
Are they in with the scanner guide pipes?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 10:38:58 AM >>>

Jerry,

We see many methods, the preference would be a flexible 2" hose for  
serviceability  
and to allow for boiler expansion.

IP7\_028336

I have enclosed a drawing to show a hose arrangement we have supplied historically.

Regards,

William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01,  
William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT  
burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to  
your scanner cooling port.  
Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624

**IP7\_028337**

435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>

Attached photos explain request for clarification concerning how ABB will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing 2" flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this note  
on February 20 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Existing Scanner..jpg" has been removed from this  
note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)  
(See attached file: B949738-Model.pdf)

**CC:** Bill Morgan; Howard Scott; Jim Knapp; John Fritzges; Ken Nielson

**IP7\_028338**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 2/26/2004 3:47:58 PM  
**Subject:** RE: Flame scanner packing gland installation difficulties

Jerry,  
You are right, there is supposed to be a female pipe coupling (see Item No.3 on attached drawing). ABB will let us know when to expect delivery.  
Regards,  
Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Monday, February 23, 2004 6:37 PM  
To: sal@advancedburner.com; harry.dohalick@us.abb.com; james.m.clark@us.abb.com; william.m.clark@us.abb.com  
Cc: Howard Hamilton; James Nelson; Jon Christensen  
Subject: Flame scanner packing gland installation difficulties

FYI,  
I found the flame scanner tube packing glands and tried installing one.  
I can't tell which way they are supposed to install. They appear to be missing a connector or something. If there is a coupler in there then the scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Jon Christensen" <JON-C@ipsc.com>, "Tarkel Larson" <tarkel@advancedburner.com>

**IP7\_028339**

**From:** Jerry Finlinson  
**To:** arnold.j.piellucci@ussev.mail.abb.com; James Clark;  
james.m.niziolek@us.abb.com  
**Date:** 3/4/2004 8:33:54 PM  
**Subject:** ABB flame scanner full coupling arrived

FYI,

We received the ABB scanner pipe full couplings today and I mounted one on the burner. See enclosed photo. With mounting like this the scanner window will be approx 15 inches behind the turning vanes in closed position, which is about 3-4 inches inserted past the backplates. Does that look reasonable?

Howard I put the boxes of couplings down on U2 west 1st LVL near that test scanner. TEI can take keep them until they are ready to install the scanners after the burners are in position.

ABB thanks for rushing in the couplings, we'll be sending the half couplings back soon.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; James Nelson; John Larsen; Jon Christensen; Sal Ferrara;  
ssteede@teiservices.com; Tarkel Larson

IP7\_028340

**From:** Jerry Finlinson  
**To:** James Clark; Jim Niziolek; Salvatore Ferrara; William Clark  
**Date:** 2/26/2004 6:08:14 PM  
**Subject:** ABB Flame scanner packing gland coupler question

Sal,

I was discussing this issue with your burner field service rep, Tarkel Larsen. He recommends that we should keep the scanners out as far as possible and still have them work well. Since Bill Clark expects them to work well with the coupler and nipple in, then we should do that because it keeps it farther away from the hot flames.

Tarkel also recommends that we use a coupler made of an insulating material, such as Bakelite or Fibercast. Does that seem reasonable to you?

William do you normally specify that type of coupler? Were you planning to provide one? We need to decide in the morning, so we can proceed. They already started with the bolt modification on the nipples, but it's taking longer than estimated and may cost up to \$4000 or \$5000, so the insulating coupler idea, sounds more cost effective and would provide longer scanner life. Do you agree.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/26/2004 3:44:18 PM >>>

Jerry,

You are right, there is supposed to be a female pipe coupling (see Item No.3 on attached drawing). ABB will let us know when to expect delivery.

Regards,  
Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Monday, February 23, 2004 6:37 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com); [harry.dohalick@us.abb.com](mailto:harry.dohalick@us.abb.com); [james.m.clark@us.abb.com](mailto:james.m.clark@us.abb.com); [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)  
Cc: Howard Hamilton; James Nelson; Jon Christensen  
Subject: Flame scanner packing gland installation difficulties

FYI,

I found the flame scanner tube packing glands and tried installing one.

I can't tell which way they are supposed to install. They appear to be missing

a connector or something. If there is a coupler in there then the scanner tip will be about 16 inches back from the turning vanes.

IP7\_028341

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**CC:** Howard Hamilton; James Nelson; Jon Christensen; Tarkel Larson

**IP7\_028342**

**From:** <arnold.j.piellucci@us.abb.com>  
**To:** <Jerry-F@ipsc.com>  
**Date:** 3/1/2004 8:37:37 AM  
**Subject:** ABT/IPSC, ABB proj #10354G01 - couplings

Good morning Jerry! Jim Clark forwarded Howard Hamilton's comment regarding the couplings to me. We ordered half couplings based on previous unit experience. The half couplings have been of sufficient strength to allow tight installation and support of the scanner / guidepipe combination.

Is there a specific reason for requesting full couplings rather than half couplings?

AP

**CC:** <james.m.clark@us.abb.com>, <sal@advancedburner.com>, <howard-h@ipsc.com>

**IP7\_028343**



**From:** Jerry Finlinson  
**To:** Howard Hamilton; James Nelson; Jon Christensen  
**Date:** 3/1/2004 11:48:22 AM  
**Subject:** Fwd: Re: ABT/IPSC, ABB proj #10354G01 - couplings/half couplings not right.

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <arnold.j.piellucci@us.abb.com> 3/1/2004 11:29:13 AM >>>

Good afternoon Jerry! I have done some further research on the half coupling and found that your assessment is correct. The half couplings will not satisfy the installation requirements. A half coupling is threaded only half way through.

I will revise the order and obtain full couplings. As soon as I have a delivery date, I will advise you. I apologize for any inconvenience that this may cause you!

AP

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 03/01/2004 12:18 PM

03/01/2004 "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>  
12:18 PM  
Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: Arnold J. Piellucci/USPOA/ABB@ABB\_US01  
cc:  
Subject: Re: ABT/IPSC, ABB proj #10354G01 - couplings

Arnold,  
It depends what a half coupling is. We were told a half coupling was a cap with a hole on one end like your packing gland caps.

**IP7\_028344**

Do you mean it has threads on both ends and is only half as thick, then that's fine.

Please describe what you mean by half coupling.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[arnold.j.piellucci@us.abb.com](mailto:arnold.j.piellucci@us.abb.com)> 3/1/2004 8:28:27 AM >>>

Good morning Jerry! Jim Clark forwarded Howard Hamilton's comment regarding the couplings to me. We ordered half couplings based on previous unit experience. The half couplings have been of sufficient strength to allow tight installation and support of the scanner / guidepipe combination.

Is there a specific reason for requesting full couplings rather than half couplings?

AP

**From:** Jerry Finlinson  
**To:** Howard Hamilton  
**Date:** 3/8/2004 9:53:58 AM  
**Subject:** Re: ABB flame scanner full coupling arrived

These are the half couplings that we received and are returning to them.  
We also received the full couplings, well at least 35 of the 50.  
Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Howard Hamilton 3/8/2004 9:30:43 AM >>>  
half-couplings?????

>>> John Larsen 3/8/2004 8:27:58 AM >>>  
The half-couplings shipped as requested by Arnold Piellucci on 3/5/04 via UPS.

>>> <[james.m.niziolek@us.abb.com](mailto:james.m.niziolek@us.abb.com)> 3/5/2004 1:11:33 PM >>>

Jerry,

This looks good. The 3-4 inches in back of the register plate sounds about right per the drawings. Based on the earlier pictures the scanner tip should be sighted through the center of the hole in the register plate and the slot in the turning vanes.

It is not a big deal but before final tightening of the packing gland and the locking bolts I'd push the scanner guidepipe all the way forward into the packing gland. In the picture it looks like it's back 1 to 1.5 inches.

Take care

Jim Niziolek

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 03/04/2004 10:33 PM

03/04/2004 "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

10:33 PM

IP7\_028346

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: James M. Clark/USIMS/ABB@ABB\_US01, James M. Niziolek/USSEV/ABB@ABB\_US01,  
<[arnold.j.piellucci@ussev.mail.abb.com](mailto:arnold.j.piellucci@ussev.mail.abb.com)>  
<[sal@advancedburner.com](mailto:sal@advancedburner.com)>, <[tarkel@advancedburner.com](mailto:tarkel@advancedburner.com)>, "Howard Hamilton"  
<[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>, "John Larsen" <[john-l@ipsc.com](mailto:john-l@ipsc.com)>, "Jon Christensen" <[JON-C@ipsc.com](mailto:JON-C@ipsc.com)>, <[ssteede@teiservices.com](mailto:ssteede@teiservices.com)>

Subject: ABB flame scanner full coupling arrived

FYI,

We received the ABB scanner pipe full couplings today and I mounted one on the burner.  
See enclosed photo. With mounting like this the scanner window will be approx 15 inches behind the turning vanes in closed position, which is about 3-4 inches inserted past the backplates.  
Does that look reasonable?

Howard I put the boxes of couplings down on U2 west 1st LVL near that test scanner.  
TEI can take keep them until they are ready to install the scanners after the burners are in position.

ABB thanks for rushing in the couplings, we'll be sending the half couplings back soon.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

(See attached file: U2 ABB scanner w Full coupling.jpg)

IP7\_028347

**From:** John Larsen  
**To:** Howard Hamilton  
**Date:** 3/8/2004 10:00:36 AM  
**Subject:** Re: ABB flame scanner full coupling arrived

If you don't know about the half couplings talk to Jerry Finlinson. It's too complicated for me to explain in a brief note.

>>> Howard Hamilton 3/8/2004 9:30:43 AM >>>  
half-couplings????

>>> John Larsen 3/8/2004 8:27:58 AM >>>  
The half-couplings shipped as requested by Arnold Piellucci on 3/5/04 via UPS.

>>> <[james.m.niziolek@us.abb.com](mailto:james.m.niziolek@us.abb.com)> 3/5/2004 1:11:33 PM >>>

Jerry,

This looks good. The 3-4 inches in back of the register plate sounds about right per the drawings. Based on the earlier pictures the scanner tip should be sighted through the center of the hole in the register plate and the slot in the turning vanes.

It is not a big deal but before final tightening of the packing gland and the locking bolts I'd push the scanner guidepipe all the way forward into the packing gland. In the picture it looks like it's back 1 to 1.5 inches.

Take care

Jim Niziolek

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 03/04/2004 10:33 PM

03/04/2004 "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

10:33 PM

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: James M. Clark/USIMS/ABB@ABB\_US01, James M.

IP7\_028348

Niziolek/USSEV/ABB@ABB\_US01,  
<[arnold.j.piellucci@ussev.mail.abb.com](mailto:arnold.j.piellucci@ussev.mail.abb.com)>

<[sal@advancedburner.com](mailto:sal@advancedburner.com)>, <[tarkel@advancedburner.com](mailto:tarkel@advancedburner.com)>, "Howard  
Hamilton"  
<[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>, "John Larsen"  
<[john-l@ipsc.com](mailto:john-l@ipsc.com)>, "Jon  
Christensen" <[JON-C@ipsc.com](mailto:JON-C@ipsc.com)>, <[ssteede@teiservices.com](mailto:ssteede@teiservices.com)>

Subject: ABB flame scanner full coupling arrived

FYI,

We received the ABB scanner pipe full couplings today and I mounted one on the burner.  
See enclosed photo. With mounting like this the scanner window will be approx 15 inches behind the turning vanes in closed position, which is about 3-4 inches inserted past the backplates.  
Does that look reasonable?

Howard I put the boxes of couplings down on U2 west 1st LVL near that test scanner.  
TEI can take keep them until they are ready to install the scanners after the burners are in position.

ABB thanks for rushing in the couplings, we'll be sending the half couplings back soon.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

(See attached file: U2 ABB scanner w Full coupling.jpg)

IP7\_028349

**From:** John Larsen  
**To:** james.m.niziolek@us.abb.com; Jerry Finlinson  
**Date:** 3/8/2004 8:28:15 AM  
**Subject:** Re: ABB flame scanner full coupling arrived

The half-couplings shipped as requested by Arnold Piellucci on 3/5/04 via UPS.

>>> <james.m.niziolek@us.abb.com> 3/5/2004 1:11:33 PM >>>

Jerry,

This looks good. The 3-4 inches in back of the register plate sounds about right per the drawings. Based on the earlier pictures the scanner tip should be sighted through the center of the hole in the register plate and the slot in the turning vanes.

It is not a big deal but before final tightening of the packing gland and the locking bolts I'd push the scanner guidepipe all the way forward into the packing gland. In the picture it looks like it's back 1 to 1.5 inches.

Take care

Jim Niziolek

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 03/04/2004 10:33 PM

03/04/2004 "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

10:33 PM

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: James M. Clark/USIMS/ABB@ABB\_US01, James M. Niziolek/USSEV/ABB@ABB\_US01,  
<[arnold.j.piellucci@ussev.mail.abb.com](mailto:arnold.j.piellucci@ussev.mail.abb.com)>

<[sal@advancedburner.com](mailto:sal@advancedburner.com)>, <[tarkel@advancedburner.com](mailto:tarkel@advancedburner.com)>, "Howard Hamilton"

<[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>, "John Larsen" <[john-l@ipsc.com](mailto:john-l@ipsc.com)>, "Jon

IP7\_028350

Christensen" <[JON-C@ipsc.com](mailto:JON-C@ipsc.com)>, <[ssteede@teiservices.com](mailto:ssteede@teiservices.com)>

Subject: ABB flame scanner full coupling arrived

FYI,

We received the ABB scanner pipe full couplings today and I mounted one on the burner.

See enclosed photo. With mounting like this the scanner window will be approx 15 inches behind the turning vanes in closed position, which is about 3-4 inches inserted past the backplates. Does that look reasonable?

Howard I put the boxes of couplings down on U2 west 1st LVL near that test scanner.

TEI can take keep them until they are ready to install the scanners after the burners are in position.

ABB thanks for rushing in the couplings, we'll be sending the half couplings back soon.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

(See attached file: U2 ABB scanner w Full coupling.jpg)

**CC:** [arnold.j.piellucci@ussev.mail.abb.com](mailto:arnold.j.piellucci@ussev.mail.abb.com); Howard Hamilton; James Nelson; [james.m.clark@us.abb.com](mailto:james.m.clark@us.abb.com); Jon Christensen; [sal@advancedburner.com](mailto:sal@advancedburner.com); [ssteede@teiservices.com](mailto:ssteede@teiservices.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com)

**IP7\_028351**



**From:** <james.m.niziolek@us.abb.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 3/5/2004 1:19:43 PM  
**Subject:** Re: ABB flame scanner full coupling arrived

Jerry,

This looks good. The 3-4 inches in back of the register plate sounds about right per the drawings. Based on the earlier pictures the scanner tip should be sighted through the center of the hole in the register plate and the slot in the turning vanes.

It is not a big deal but before final tightening of the packing gland and the locking bolts I'd push the scanner guidepipe all the way forward into the packing gland. In the picture it looks like it's back 1 to 1.5 inches.

Take care

Jim Niziolek

Message from "Jerry Finlinson" <Jerry-F@ipsc.com> received on 03/04/2004 10:33 PM

03/04/2004 "Jerry Finlinson" <Jerry-F@ipsc.com>

10:33 PM

Sent by "Jerry Finlinson" <Jerry-F@ipsc.com>

To: James M. Clark/USIMS/ABB@ABB\_US01, James M. Niziolek/USSEV/ABB@ABB\_US01,  
<arnold.j.piellucci@ussev.mail.abb.com>

<sal@advancedburner.com>, <tarkel@advancedburner.com>, "Howard Hamilton"

<howard-h@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "John Larsen" <john-l@ipsc.com>, "Jon Christensen" <JON-C@ipsc.com>, <ssteede@teiservices.com>

Subject: ABB flame scanner full coupling arrived

**IP7\_028352**

FYI,

We received the ABB scanner pipe full couplings today and I mounted one on the burner.

See enclosed photo. With mounting like this the scanner window will be approx 15 inches behind

the turning vanes in closed position, which is about 3-4 inches inserted past the backplates.

Does that look reasonable?

Howard I put the boxes of couplings down on U2 west 1st LVL near that test scanner.

TEI can take keep them until they are ready to install the scanners after the burners are in position.

ABB thanks for rushing in the couplings, we'll be sending the half couplings back soon.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

(See attached file: U2 ABB scanner w Full coupling.jpg)

CC: <arnold.j.piellucci@ussev.mail.abb.com>, "Howard Hamilton" <howard-h@ipsc.com>, <james.m.clark@us.abb.com>, "James Nelson" <JIM-N@ipsc.com>, "John Larsen" <john-l@ipsc.com>, "Jon Christensen" <JON-C@ipsc.com>, <sal@advancedburner.com>, <ssteede@teiservices.com>, <tarkel@advancedburner.com>

**From:** Jerry Finlinson  
**To:** Jim Niziolek; william.m.clark@us.abb.com  
**Date:** 2/27/2004 7:46:51 AM  
**Subject:** Re: ABB Flame scanner packing gland coupler question

Bill,

It seems to me that using insulating couplers would reduce the conduction from the windbox wall, which is about 600F. This should decrease the head temperature of the scanner and give it a longer life.

Back inside the tube there should be minimal radiation.  
It's true there will also be conduction down the scanner pipe guide pipe as well.

Tarkel Larsen says he has no prior experience with ABB scanners, but that every other scanner installation he has seen, they always use insulating couplers. Have you not ever done that?

I guess we'll go with what you recommend and provide, since you are guaranteeing the equipment, but for maximum life, seems like we'd want to reduce the heat input by minimizing conductive heat transfer.

Thanks, Jerry

---

>>> <william.m.clark@us.abb.com> 2/26/2004 8:50:16 PM >>>

Jerry,

Based on the input from Jim Niziolek (Flame Scanner Product Manager), I agree that the flame threaded coupling is the proper way to go. Jim Clark our project manager is in the process of sourcing the half couplings. The half couplings selected are carbon steel.

It has been our experience that nonmetallic couplings offer little insulation from the radiant heat on the burner front, once it is hot - its hot . With adequate air flow through the heads the electronics will remain temperate. These scanners have typically operated on C-E tangential fired boilers with ambient temperatures of 230 degrees and higher in the hot corners. As long as the cooling air is reliable and meets the 6 inches above furnace pressure as previously discussed, heat related failures or scanner life is not a problem.

Regards,

Bill Clark

**IP7\_028354**

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/26/2004 08:07 PM

02/26/2004 08:07 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: <[sal@advancedburner.com](mailto:sal@advancedburner.com)>, James M. Clark/USIMS/ABB@ABB\_US01, James M. Niziolek/USSEV/ABB@ABB\_US01, William M. Clark/USPOA/ABB@ABB\_US01  
cc: <[tarkel@advancedburner.com](mailto:tarkel@advancedburner.com)>, "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>, "Jon Christensen" <[JON-C@ipsc.com](mailto:JON-C@ipsc.com)>  
Subject: ABB Flame scanner packing gland coupler question

Sal,

I was discussing this issue with your burner field service rep, Tarkel Larsen. He recommends that we should keep the scanners out as far as possible and still have them work well. Since Bill Clark expects them to work well with the coupler and nipple in, then we should do that because it keeps it farther away from the hot flames.

Tarkel also recommends that we use a coupler made of an insulating material, such as Bakelite or Fibercast. Does that seem reasonable to you?

William do you normally specify that type of coupler? Were you planning to provide one? We need to decide in the morning, so we can proceed. They already started with the bolt modification on the nipples, but it's taking longer than estimated and may cost up to \$4000 or \$5000, so the insulating coupler idea, sounds more cost effective and would provide longer scanner life. Do you agree.

Thanks, Jerry

Jerry Finlinson, Engineer

**IP7\_028355**

Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/26/2004 3:44:18 PM

>>>

Jerry,

You are right, there is supposed to be a female pipe coupling (see  
Item

No.3 on attached drawing). ABB will let us know when to expect  
delivery.

Regards,

Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Monday, February 23, 2004 6:37 PM

To: [sal@advancedburner.com](mailto:sal@advancedburner.com); [harry.dohalick@us.abb.com](mailto:harry.dohalick@us.abb.com);

[james.m.clark@us.abb.com](mailto:james.m.clark@us.abb.com); [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Cc: Howard Hamilton; James Nelson; Jon Christensen

Subject: Flame scanner packing gland installation difficulties

FYI,

I found the flame scanner tube packing glands and tried installing  
one.

I can't tell which way they are supposed to install. They appear to  
be

missing

a connector or something. If there is a coupler in there then the  
scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.

Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

IP7\_028356

(See attached file: C.htm)

**CC:** Aaron Nissen; Howard Hamilton; James Nelson; Jon Christensen

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>, <james.m.clark@us.abb.com>, <james.m.niziolek@us.abb.com>, <william.m.clark@us.abb.com>  
**Date:** 2/27/2004 6:24:35 AM  
**Subject:** RE: ABB Flame scanner packing gland coupler question

Jerry,  
Since it is ABB's scanner system design, I leave the recommendations/design changes to them. I don't understand why there should be any need for field modifications. My question to ABB is why can't the scanner be installed as designed and built?  
Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Thursday, February 26, 2004 8:08 PM  
To: sal@advancedburner.com; james.m.clark@us.abb.com; james.m.niziolek@us.abb.com; william.m.clark@us.abb.com  
Cc: tarkel@advancedburner.com; Howard Hamilton; James Nelson; Jon Christensen  
Subject: ABB Flame scanner packing gland coupler question

Sal,  
I was discussing this issue with your burner field service rep, Tarkel Larsen.  
He recommends that we should keep the scanners out as far as possible and still have them work well. Since Bill Clark expects them to work well with the coupler and nipple in, then we should do that because it keeps it farther away from the hot flames.

Tarkel also recommends that we use a coupler made of an insulating material, such as Bakelite or Fibercast. Does that seem reasonable to you?

William do you normally specify that type of coupler? Were you planning to provide one?  
We need to decide in the morning, so we can proceed. They already started with the bolt modification on the nipples, but it's taking longer than estimated and may cost up to \$4000 or \$5000, so the insulating coupler idea, sounds more cost effective and would provide longer scanner life. Do you agree.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

IP7\_028358

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/26/2004 3:44:18 PM

>>>

Jerry,

You are right, there is supposed to be a female pipe coupling (see Item

No.3 on attached drawing). ABB will let us know when to expect delivery.

Regards,

Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]

Sent: Monday, February 23, 2004 6:37 PM

To: sal@advancedburner.com; harry.dohalick@us.abb.com;

james.m.clark@us.abb.com; william.m.clark@us.abb.com

Cc: Howard Hamilton; James Nelson; Jon Christensen

Subject: Flame scanner packing gland installation difficulties

FYI,

I found the flame scanner tube packing glands and tried installing one.

I can't tell which way they are supposed to install. They appear to be

missing

a connector or something. If there is a coupler in there then the scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.

Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer

Intermountain Power Service Corp

850 West Brush Wellman Rd

Delta, UT 84624

435-864-6466

fax 0776/6670

jerry-f@ipsc.com

CC: <tarkel@advancedburner.com>, "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Jon Christensen" <JON-C@ipsc.com>

IP7\_028359



**From:** <james.m.niziolek@us.abb.com>  
**To:** "Salvatore Ferrara" <sal@advancedburner.com>, "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 2/27/2004 9:21:23 AM  
**Subject:** RE: ABB Flame scanner packing gland coupler question

Jerry and Sal,

The scanner mounting seems have turned into a "hot" topic and so I though maybe a few comments and clarifications might be worthwhile.

The as designed scanner location and mounting are fine. The issue of changing the mount is really only a matter of where the scanner head lies outside the burner. The 6 to 7 inch difference in insertion depth should not have any impact on scanner operation as long as the scanner line of sight/viewing angle does not become obstructed. In looking at the burner drawing, ABT made sure this was not an issue by adequately sizing the holes in the spinner vanes and register plate. Unless there is a clearance issue outside the burner I see no reason to change the scanner location or mounting configuration.

In the standard scanner mounting ABB supplied a packing gland assembly that secures the scanner guide pipe to the 3" mounting pipe. The scanner guide pipe is mounted through packing material which provides a gas seal AND acts as a thermal break. The only metal to metal contact between the guide pipe and the 3" mounting pipe is through the three locking bolts that secures the guide pipe from rotating. With this design, a 3" fiber coupling connecting the packing gland assembly to the 3" mounting pipe does not buy you much in terms of additional thermal protection for the scanner. Over the years I have seen scanners mounted using thermal blocks or thermal couplings but these have always been used when the scanner would otherwise have metal to metal contact with the burner face or sight tube, not through a packing gland. With the recommended purge air and the existing packing gland convective heat to the scanner is not an issue when a steel coupling is used to mount the scanner packing gland. Again, I see no reason to change the mounting design from what was supplied.

I'm in the office for the next few days so if there are questions, please give me a call.

Take care,

Jim

IP7\_028360

Jim Niziolek  
Product Manager, Boiler Sensors  
ABB Inc.  
2 Waterside Crossing  
Suite 200  
Windsor, CT 06095

Phone: 860-285-6775  
Fax: 860-285-6999

Message from "Salvatore Ferrara" <sal@advancedburner.com> received on  
02/27/2004 08:21 AM

02/27/2004 "Salvatore Ferrara" <sal@advancedburner.com>  
08:21 AM

To: "Jerry Finlinson" <Jerry-F@ipsc.com>, James M.  
Clark/USIMS/ABB@ABB\_US01, James M.  
Niziolek/USSEV/ABB@ABB\_US01, William M.  
Clark/USPOA/ABB@ABB\_US01  
cc: <tarkel@advancedburner.com>, "Howard Hamilton"  
<howard-h@ipsc.com>, "James  
Nelson" <JIM-N@ipsc.com>, "Jon Christensen" <JON-C@ipsc.com>  
Subject: RE: ABB Flame scanner packing gland coupler question

Jerry,  
Since it is ABB's scanner system design, I leave the  
recommendations/design changes to them. I don't understand why there  
should be any need for field modifications. My question to ABB is why  
can't the scanner be installed as designed and built?  
Sal

-----Original Message-----

IP7\_028361

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Thursday, February 26, 2004 8:08 PM  
To: sal@advancedburner.com; james.m.clark@us.abb.com;  
james.m.niziolek@us.abb.com; william.m.clark@us.abb.com  
Cc: tarkel@advancedburner.com; Howard Hamilton; James Nelson; Jon Christensen  
Subject: ABB Flame scanner packing gland coupler question

Sal,

I was discussing this issue with your burner field service rep, Tarkel Larsen. He recommends that we should keep the scanners out as far as possible and still have them work well. Since Bill Clark expects them to work well with the coupler and nipple in, then we should do that because it keeps it farther away from the hot flames.

Tarkel also recommends that we use a coupler made of an insulating material, such as Bakelite or Fibercast. Does that seem reasonable to you?

William do you normally specify that type of coupler? Were you planning to provide one? We need to decide in the morning, so we can proceed. They already started with the bolt modification on the nipples, but it's taking longer than estimated and may cost up to \$4000 or \$5000, so the insulating coupler idea, sounds more cost effective and would provide longer scanner life. Do you agree.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/26/2004 3:44:18 PM

>>>

Jerry,

You are right, there is supposed to be a female pipe coupling (see Item No.3 on attached drawing). ABB will let us know when to expect delivery.

Regards,  
Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Monday, February 23, 2004 6:37 PM  
To: sal@advancedburner.com; harry.dohalick@us.abb.com;

IP7\_028362

james.m.clark@us.abb.com; william.m.clark@us.abb.com  
Cc: Howard Hamilton; James Nelson; Jon Christensen  
Subject: Flame scanner packing gland installation difficulties

FYI,

I found the flame scanner tube packing glands and tried installing one.

I can't tell which way they are supposed to install. They appear to be

missing

a connector or something. If there is a coupler in there then the scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** "Howard Hamilton" <howard-h@ipsc.com>, <james.m.clark@us.abb.com>, "Jerry Finlinson" <Jerry-F@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Jon Christensen" <JON-C@ipsc.com>, <tarkel@advancedburner.com>, <william.m.clark@us.abb.com>, <arnold.j.piellucci@us.abb.com>

**IP7\_028363**

**From:** <william.m.clark@us.abb.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 2/26/2004 8:55:16 PM  
**Subject:** Re: ABB Flame scanner packing gland coupler question

Jerry,

Based on the input from Jim Niziolek (Flame Scanner Product Manager), I agree that the flame threaded coupling is the proper way to go. Jim Clark our project manager is in the process of sourcing the half couplings. The half couplings selected are carbon steel.

It has been our experience that nonmetallic couplings offer little insulation from the radiant heat on the burner front, once it is hot - its hot . With adequate air flow through the heads the electronics will remain temperate. These scanners have typically operated on C-E tangential fired boilers with ambient temperatures of 230 degrees and higher in the hot corners. As long as the cooling air is reliable and meets the 6 inches above furnace pressure as previously discussed, heat related failures or scanner life is not a problem.

Regards,

Bill Clark

Message from "Jerry Finlinson" <Jerry-F@ipsc.com> received on 02/26/2004 08:07 PM

02/26/2004 08:07 PM

"Jerry Finlinson" <Jerry-F@ipsc.com>

Sent by "Jerry Finlinson" <Jerry-F@ipsc.com>

**IP7\_028364**

To: <sal@advancedburner.com>, James M. Clark/USIMS/ABB@ABB\_US01, James M. Niziolek/USSEV/ABB@ABB\_US01, William M. Clark/USPOA/ABB@ABB\_US01  
cc: <tarkel@advancedburner.com>, "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Jon Christensen" <JON-C@ipsc.com>  
Subject: ABB Flame scanner packing gland coupler question

Sal,  
I was discussing this issue with your burner field service rep, Tarkel Larsen. He recommends that we should keep the scanners out as far as possible and still have them work well. Since Bill Clark expects them to work well with the coupler and nipple in, then we should do that because it keeps it farther away from the hot flames.

Tarkel also recommends that we use a coupler made of an insulating material, such as Bakelite or Fibercast. Does that seem reasonable to you?

William do you normally specify that type of coupler? Were you planning to provide one? We need to decide in the morning, so we can proceed. They already started with the bolt modification on the nipples, but it's taking longer than estimated and may cost up to \$4000 or \$5000, so the insulating coupler idea, sounds more cost effective and would provide longer scanner life. Do you agree.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/26/2004 3:44:18 PM

>>>

Jerry,  
You are right, there is supposed to be a female pipe coupling (see Item No.3 on attached drawing). ABB will let us know when to expect delivery.  
Regards,  
Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]

IP7\_028365

Sent: Monday, February 23, 2004 6:37 PM  
To: sal@advancedburner.com; harry.dohalick@us.abb.com;  
james.m.clark@us.abb.com; william.m.clark@us.abb.com  
Cc: Howard Hamilton; James Nelson; Jon Christensen  
Subject: Flame scanner packing gland installation difficulties

FYI,  
I found the flame scanner tube packing glands and tried installing one.  
I can't tell which way they are supposed to install. They appear to be missing a connector or something. If there is a coupler in there then the scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

(See attached file: C.htm)

CC: "Howard Hamilton" <howard-h@ipsc.com>, <james.m.clark@us.abb.com>, <james.m.niziolek@us.abb.com>, "James Nelson" <JIM-N@ipsc.com>, "Jon Christensen" <JON-C@ipsc.com>, <sal@advancedburner.com>, <tarkel@advancedburner.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 2/27/2004 9:57:18 AM  
**Subject:** RE: ABT burner thermocouple installation difficulties

Jerry,  
I ordered 96 replacement thermocouples. They will be 1/16" diameter, simplex type, as shown on attached sketch 10-4881. The shop made a mockup of the tube run and tried a 1/8" diameter thermocouple and it was still very difficult to insert. The 1/16 diameter type inserts easily. We have to go to compression type (spring loaded type doesn't come in 1/16" diameter). The compression fitting will provide adjustability to insure the tip is inserted fully and bottoms out at end of tube. Delivery is being expedited however material takes 2 weeks to acquire. The promised delivery is four weeks (by 4/2/04).  
Regards,  
Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Wednesday, February 25, 2004 9:57 AM  
To: sal@advancedburner.com  
Cc: Howard Hamilton; Howard Scott; James Nelson; John Fritzges; Phil Hailes  
Subject: RE: ABT burner thermocouple installation difficulties

Sal,  
I had my I&C supervisors go out with me to attempt to put the thermocouples into the wells. With much struggle and grabbing them with pliers we were able to get the short one in. We are nervous about damaging the thermocouple sheath.

We also got a 1/8 inch diameter copper rod and inserted it in, it went easier, but was still twisted up. You should specify that the bend radius should not be less than 10 to 12 inches. In the case of the short thermocouple is a bend even necessary? Couldn't the thermowell just be angled down to the spot where it is welded on?

We think at this point that it would be best to switch all the thermocouples to 1/8 inch diameter. Can that be done in the time frame? You can have your guy take a look at it when he is here tomorrow.

We are worried that it's such a struggle to get the 3/16 diameter ones in the pipe that it will be nearly impossible to get them out again. We also don't want to use organic lubricant because it will carbonize in service and make it difficult to reinstall another thermocouple.

Thanks, Jerry

IP7\_028367



Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/23/2004 3:02:08 PM  
>>>

Jerry,  
Per my discussion with the PCW fab shop, tubes were bent with 4" centerline radius die. In discussion with the thermocouple supplier, the .312" tube ID with 4" radius bends is sufficient for the .187" diameter thermocouple to pass thru. Our experience with the TC's is they are pretty flexible however they don't just slide in. It takes a little effort to work the TC through the tube but our experience is that they will work through. Twisting, by holding onto the 3/16 sheath at the same time you're pushing in normally helps (just be careful not to twist the head portion of the TC assembly).  
Let me know how this works.  
Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Friday, February 20, 2004 3:51 PM  
To: sal@advancedburner.com  
Cc: Howard Hamilton; Howard Scott; Jim Knapp; James Nelson; John Fritzges; Phil Hailes  
Subject: ABT burner thermocouple installation difficulties

FYI,

Yesterday, I took one of the thermocouples out and tried sliding it down the thermowells that are installed in the burner. It would only slide in about 13 inches before hitting a tight bend in the thermowell. Apparently your installers are making some sharp corner bends on the thermowell that's making it very difficult to insert.

Have you tried inserting one?  
The type E thermocouples that we have are 3/16 inch diameter and don't bend so easy.

Maybe we'll need to get some 1/8 inch diameter thermocouples.

I noticed that there are some sharp bends on the thermocouple out near the tip as well.

**IP7\_028368**

The bends are only 10 to 15 degrees, but they have a sharp corner, it would have been better to make it very gradual, then the thermocouple would slide in easily.

Please advise on your recommended solution.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** "Howard Hamilton" <howard-h@ipsc.com>, "Howard Scott" <HOWARD-S@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "John Fritzges" <JOHN-F@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, "Tarkel Larson" <tarkel@advancedburner.com>

**From:** Jerry Finlinson  
**To:** arnold.j.piellucci@us.abb.com  
**Date:** 3/2/2004 11:24:39 AM  
**Subject:** Re: ABT/IPSC, ABB proj #10354G01 - half couplings received

Arnold,

We just received 4 boxes of half couplings. I went and opened one box. They are threaded on one end and meant to be welded on the other end. So they won't work for this installation. I guess you are sending some full couplings? What do you want us to do with these half couplings? Should I return them to you? Please provide shipping address info.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <arnold.j.piellucci@us.abb.com> 3/1/2004 11:29:13 AM >>>

Good afternoon Jerry! I have done some further research on the half coupling and found that your assessment is correct. The half couplings will not satisfy the installation requirements. A half coupling is threaded only half way through.

I will revise the order and obtain full couplings. As soon as I have a delivery date, I will advise you. I apologize for any inconvenience that this may cause you!

AP

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 03/01/2004 12:18 PM

03/01/2004 "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>  
12:18 PM  
Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: Arnold J. Piellucci/USPOA/ABB@ABB\_US01  
cc:  
Subject: Re: ABT/IPSC, ABB proj #10354G01 - couplings

IP7\_028370

Arnold,

It depends what a half coupling is. We were told a half coupling was a cap with a hole on one end like your packing gland caps.

Do you mean it has threads on both ends and is only half as thick, then that's fine.

Please describe what you mean by half coupling.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[arnold.j.piellucci@us.abb.com](mailto:arnold.j.piellucci@us.abb.com)> 3/1/2004 8:28:27 AM >>>

Good morning Jerry! Jim Clark forwarded Howard Hamilton's comment regarding the couplings to me. We ordered half couplings based on previous unit experience. The half couplings have been of sufficient strength to allow tight installation and support of the scanner / guidepipe combination.

Is there a specific reason for requesting full couplings rather than half couplings?

AP

CC: Howard Hamilton; James Nelson

IP7\_028371

**From:** <william.m.clark@us.abb.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 2/20/2004 10:43:53 AM  
**Subject:** Response from ABB Regarding Connecting Cooling Air Hose to ABB Scanners

Jerry,

We see many methods, the preference would be a flexible 2" hose for serviceability and to allow for boiler expansion.

I have enclosed a drawing to show a hose arrangement we have supplied historically.

Regards,

William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: william.m.clark@us.abb.com

Message from "Jerry Finlinson" <Jerry-F@ipsc.com> received on 02/20/2004 12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <Jerry-F@ipsc.com>

Sent by "Jerry Finlinson" <Jerry-F@ipsc.com>

To: "Clark Johnson" <CLARK-J@ipsc.com>, Harry Dohalick/USINY/ABB@ABB\_US01,  
William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <howard-h@ipsc.com>

IP7\_028372

Subject: Fwd: Connecting cooling air to ABB Scanners

William,

I have here photos of our current burners and the new ABT burner.

It shows the connection for flame scanner cooling air.

Our installers are wondering how you prefer the 2" pipe connected to your scanner cooling port.

Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>

Attached photos explain request for clarification concerning how ABB will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing 2" flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this note on February 20 2004 by William M. Clark/USPOA/ABB

Attention: Attachment "Existing Scanner..jpg" has been removed from this

note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)

(See attached file: B949738-Model.pdf)

CC: "Clark Johnson" <CLARK-J@ipsc.com>, <harry.dohalick@us.abb.com>, "Howard Hamilton" <howard-h@ipsc.com>

IP7\_028373

**From:** Jerry Finlinson  
**To:** Harry Dohalick; James Clark; Sal Ferrara; William.m.clark@us.abb.com  
**Date:** 2/23/2004 4:37:27 PM  
**Subject:** Flame scanner packing gland installation difficulties

FYI,

I found the flame scanner tube packing glands and tried installing one. I can't tell which way they are supposed to install. They appear to be missing a connector or something. If there is a coupler in there then the scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; James Nelson; Jon Christensen

IP7\_028374

**From:** Jerry Finlinson  
**To:** Howard Hamilton  
**Date:** 2/23/2004 10:48:21 AM  
**Subject:** Fwd: RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/20/2004 2:45:56 PM >>>  
Jerry,

Yes, please get a written quote and advise. I think we should stick with the 3/4" copper tube in straight-rigid plumbing grade for use with soldered (sweat) joint connections for all the runs both short and long. It will be simpler and cleaner that way.

Let me know.

Thanks.

Andy

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Friday, February 20, 2004 1:21 PM  
To: Andy Chew  
Subject: RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

Andy

My cost of 80 cents per foot was not a real quote.  
I called the local hardware store and he said that 100 ft would be 99 c/ft, but it would be much cheaper to order 5000 ft, so maybe we could get it for 50 c or so. Do you think we should use 1/2 inch on the runs less than 50 ft? Would you like me to get a real quote to compare?  
We are talking rigid copper pipe that solders together, right?  
Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

IP7\_028375



>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/20/2004 2:14:45 PM >>>  
Jerry,

I am getting a quote on our end for the 3/4" tubing to compare with your tubing cost of 0.80 cents per foot. If it is less expensive for you to supply then we are OK with the option to provide IPSC with a credit against future technician labor and/or wind tunnel testing.

I will get back to you on or before Monday 2/23/04.

Thank you.

Andy

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Friday, February 20, 2004 12:25 PM

To: Andy Chew

Subject: Re: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

Thanks for the info on the vane position.

I just sent an earlier email before seeing this one.  
Would you like us to put together a list of what tubing we recommend along with a cost estimate? If we purchase it, we could use that as a credit against the calibration labor and the potential wind tunnel testing.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/20/2004 11:04:56 AM >>>  
Jerry,

I have attached the rev 1 test matrix used for the ABT/IPSC burner testing project. All three spin vane settings listed (30°, 45° and 60°) are in degrees open from the closed position. i.e. 0° is closed and 90° is full open.

Please let me know the spec and cost estimate on your end for the copper tubing you wish to use for the 3/4" hard tubing runs from the burner fronts to the transmitter/purge cabinets.

Thank you.

Andrew Chew  
Project Manager

IP7\_028376

Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

**From:** Jerry Finlinson  
**To:** Howard Hamilton; James Nelson  
**Date:** 2/23/2004 7:28:35 AM  
**Subject:** Fwd: Re: Response from ABB Regarding Connecting Cooling Air Hose to ABB Scanners

ABB gives OK for flame scanner cooling air.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <william.m.clark@us.abb.com> 2/23/2004 7:13:18 AM >>>

Jerry,

ICFM is caculated to consider both Relitive Humidity and Vapor Pressure (VP).

ICFM = SCFM x Std (VP)	X	440 +
Ambient		
Suction Pressure RH (VP)	528	

Typically most manufacturers will not tag a compressor or Fan with ICFM due to changing humidity and elevational factors.

The 30 CFM specification was a leftover from our experience with T-Fired boilers. The critical factor is 6"WC above furnace pressure. On C-E Pressurized T- Fired units we needed the 30 CFM to maintain the 6"WC. The air system you described as capable of delivering 13"WC will be more than adequate.

Regards,

Bill

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/20/2004 03:31 PM

02/20/2004 03:31 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

IP7\_028378

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: William M. Clark/USPOA/ABB@ABB\_US01  
cc:  
Subject: Re: Response from ABB Regarding Connecting  
Cooling Air Hose to ABB  
Scanners

Thanks for the reply.  
We just looked up our blower specs. They are rated at 925 ICFM @ 24 inches w.g.  
If we divide 925/48 burners = 19 CFM. (Do you know what ICFM means?)  
That is 30% below your specification of 30 CFM. Are we taking a big risk or is it reasonable within your tolerance?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 12:38:16 PM >>>

Jerry,

The 6" above furnace pressure is the standard. Your Hoffman blowers sound as if they would be adequate at 13.5". Our scanners are good up to 900 degrees F on the hot end.  
The air helps keep the electronics head temperate and creates a positive purge through the lens assembly to keep it clean. Restricting the input to 1.5" pipe would not cause a problem.

Bill

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/20/2004 01:57 PM

IP7\_028379

02/20/2004 01:57 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "Jim Knapp" <[JIM-KNAPP@ipsc.com](mailto:JIM-KNAPP@ipsc.com)>, "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>  
Subject: Re: Response from ABB Regarding Connecting Cooling Air Hose to ABB Scanners

William,  
We currently have Baily Flame On scanners with a 1.5 inch cooling air line,  
the air is coming from a Hoffman Flame Scanner Blower and 6" header.  
We'd like to adapt the 1.5 inch line to your 2" input connection. Do you think that would be sufficient.  
Do these new scanners take about the same cooling air as the Bailey Flame On system?  
We'd rather not repipe our system unless absolutely necessary.

I'm not aware of any CFM measurements, should we try and get some?

I noticed in the manual that you recommend 6" positive pressure and 30 cfm at 120F.  
Our Hoffman blowers create pressure from 0-27 inches water.  
There is an alarm if the pressure drops below 13 inches and auto starts the backup blower if the pressure drops below 12.5 inches water.  
Since our furnace runs at -.5 inches, we have a pressure drop of at least 13.5 inches probably much greater.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 10:38:58 AM >>>

IP7\_028380

Jerry,

We see many methods, the preference would be a flexible 2" hose for serviceability and to allow for boiler expansion.

I have enclosed a drawing to show a hose arrangement we have supplied historically.

Regards,

William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01,  
William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to your scanner cooling port.

IP7\_028381

Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>  
Attached photos explain request for clarification concerning how ABB  
will wants seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and  
connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing  
2"  
flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this  
note  
on February 20 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Existing Scanner..jpg" has been removed from  
this  
note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)  
(See attached file: B949738-Model.pdf)

(See attached file: C.htm)

(See attached file: C.htm)

**CC:** Bill Morgan; Ken Nielson

**IP7\_028382**

**From:** Jerry Finlinson  
**To:** Harry Dohalick; James Clark; [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)  
**Date:** 2/25/2004 4:32:17 PM  
**Subject:** Re: Flame scanner packing gland installation sample

Bill,

We have modified a flame scanner packing gland pipe as shown in the attached photo. Please examine and give your approval. We think we'll change it by moving the positioning bolts farther from the burner, closer to the packing gland, so they won't interfere with insulation. There are about 3.5 threads on the bolt. That should be sufficient. TEI estimates that it will take 30 to 60 minutes per burner to make these modifications.

Give your approval to go ahead like this.  
They'd like to start this work Thursday morning.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/23/2004 9:43:52 PM >>>

Jerry,

You received the entire assembly which typically connects to a three inch female coupling. Since you have a threaded pipe already installed there can be only a few options. Your picture Scanner Packing Gland2 is the correct orientation. One option would be to modify the existing pipe and drill holes for the positioning bolts and place the gland cap and packing on the existing pipe. The other option would be to cut the pipe back on the burner and re-thread and provide a female coupling. The bolts in the packing gland are need to keep the pipe centered and lock it down the packing gland cap and packing material is required to seal the assembly.

If you need any additional assistance please contact me at the following:

Regards,

William M. Clark  
ABB Inc.  
2 Waterside Crossing  
Windsor, CT 06095

**IP7\_028383**



Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/23/2004  
06:37 PM

02/23/2004 06:37 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: <[sal@advancedburner.com](mailto:sal@advancedburner.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01, James M.  
Clark/USIMS/ABB@ABB\_US01, William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "James Nelson"  
<[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>,  
"Jon Christensen" <[JON-C@ipsc.com](mailto:JON-C@ipsc.com)>  
Subject: Flame scanner packing gland installation  
difficulties

FYI,  
I found the flame scanner tube packing glands and tried installing  
one.  
I can't tell which way they are supposed to install. They appear to be  
missing  
a connector or something. If there is a coupler in there then the  
scanner tip will be about 16 inches back from the turning vanes.

See enclosed photo of the packing gland.  
Please advise.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

IP7\_028384

Attention: Attachment "Scanner packing gland2 sm.jpg" has been removed  
from this note on February 23 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Scanner packing gland reversed sm.jpg" has been  
removed from this note on February 23 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)

**CC:** Howard Hamilton; James Nelson; Phil Hailes

**From:** Jerry Finlinson  
**To:** Bill Morgan  
**Date:** 2/18/2004 6:54:39 PM  
**Subject:** U2 Flame Scanner status feb18 2004

Bill,

Just as I was about to go, Jon C tells me that you had some questions.  
So here are the answers.

I got a call from Harry Duhalik today asking me to try placing a scanner in position on the burner to make sure they fit correctly. I tried to track down the shipment. The FedEx Freight website said they were still in SLC, but later I got an email that we received them on Monday. So tomorrow I'll go find them and do the fit test.

Mike Tolar is doing the training class. He is going to be coming back 25March to do the commissioning and startup. He's giving us lots of tips and things to check out before he arrives. I'm going to run my drawings by him tomorrow on the wiring details. He thinks it will take 5-7 days after startup to get it all tuned and set up, so he'll stay as long as it takes.

He's also reviewing how to install and insert them, so that will be good.

We'll review with TEI how to install the guide pipes, as soon as I find them tomorrow.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; James Nelson; Jon Christensen; Ken Nielson; Phil Hailes

**IP7\_028386**

**From:** Jerry Finlinson  
**To:** Howard Hamilton; Ken Nielson  
**Date:** 3/1/2004 3:00:23 PM  
**Subject:** Fwd: RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

FYI,

Here's Air Monitors advise about using Carbon Steel tubing on the IBAM manifolds.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Andy Chew <achew@airmonitor.com> 3/1/2004 2:22:00 PM >>>  
Jerry:

Air Monitor Corp is generally OK with using Carbon Steel pipe for signal lines contingent upon:

1. Threaded connections are minimized and wherever possible connections are to be welded.
2. Something other than carbon steel unions or pipe couplings be used as the signal line 'break' fitting. With time and vibration these are prone to leakage. We were just involved with utility in diagnosing and fixing this problem.
3. The plant air used for purge is dry. If it has moisture eventually scale/rust will occur inside the pipe. That scale/rust can flake off and eventually end up plugging the sensing holes from the inside.

If you were choosing to use copper, which is what we recommend after SST tubing, is doing each signal line with a MPT x sweat fitting at the burner wall and flex hose connection, copper tube with sweat straight connectors or elbows to connect the sections, a copper sweat union near the AMC enclosure and another MPT x sweat fitting to connect to the enclosure. Nice thing about copper is that if there is ever a need to remove part of the signal line the repair is quite easy with a few straight connectors.

Again, I will be getting back to you on what it would have cost us in material to make these connections.

Regards,

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

IP7\_028387

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Monday, March 01, 2004 9:26 AM

To: Andy Chew

Subject: RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Andy,

Thanks for checking into that.

As it turns out, my boss doesn't want me to use tubing because our plant standard

is to use welded carbon steel piping in this application. So we've already got that

steel piping on order. Let's work out a reasonable credit with you for how much

the tubing would have cost. If it was copper it would have been around \$6000

and if it was stainless it would have been \$12K to \$15K. I do believe the spec said stainless, didn't it?

Anyway, let's work up a mutually agreeable credit

for that and we'll apply it towards some additional windtunnel testing after we know where our burners are set or decrease the price a bit.

Thanks,

Jerry

Jerry Finlinson, Engineer

Intermountain Power Service Corp

850 West Brush Wellman Rd

Delta, UT 84624

435-864-6466

fax 0776/6670

[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/27/2004 9:52:47 AM >>>

Jerry,

I will have quotes from our copper tubing/fitting vendors soon to compare. A couple of things:

All of the signal connections on the cabinets, burner fronts and flex connections are either 1/2" male or 1/2" female pipe. Why are the fittings quoted 3/4" MNPT? I think they should be both 1/2" MNPT x 3/4" tube sweat and 1/2" FNPT x 3/4" tube sweat. You will eliminate the need to provide more fittings to reduce from 3/4" to 1/2" threaded pipe connections.

I reviewed the proposal and it indicates AMC will supply "tubing, fittings, expansion joints/flex connections" but there is no mention of tube trays or supports. I asked our sales group about this and they confirmed trays/supports are not our scope.

Thank you.

Andrew Chew

**IP7\_028388**

Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

**CC:** James Nelson; Jon Christensen

**From:** Jerry Finlinson  
**To:** Howard Hamilton  
**Date:** 2/20/2004 1:33:21 PM  
**Subject:** Fwd: Re: Response from ABB Regarding Connecting Cooling Air Hose to ABB Scanners

Here's Bill Clark's latest response.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <william.m.clark@us.abb.com> 2/20/2004 12:38:16 PM >>>

Jerry,

The 6" above furnace pressure is the standard. Your Hoffman blowers sound as if they would be adequate at 13.5". Our scanners are good up to 900 degrees F on the hot end. The air helps keep the electronics head temperate and creates a positive purge through the lens assembly to keep it clean. Restricting the input to 1.5" pipe would not cause a problem.

Bill

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/20/2004 01:57 PM

02/20/2004 01:57 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "Jim Knapp" <[JIM-KNAPP@ipsc.com](mailto:JIM-KNAPP@ipsc.com)>,  
"James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>  
Subject: Re: Response from ABB Regarding Connecting

IP7\_028390

Cooling Air Hose to ABB  
Scanners

William,  
We currently have Baily Flame On scanners with a 1.5 inch cooling  
air line,  
the air is coming from a Hoffman Flame Scanner Blower and 6" header.  
We'd like to adapt the 1.5 inch  
line to your 2" input connection. Do you think that would be  
sufficient.  
Do these new scanners take about the same cooling air as the Bailey  
Flame On system?  
We'd rather not repipe our system unless absolutely necessary.

I'm not aware of any CFM measurements, should we try and get some?

I noticed in the manual that you recommend 6" positive pressure and 30  
cfm at 120F.  
Our Hoffman blowers create pressure from 0-27 inches water.  
There is an alarm if the pressure drops below 13 inches and  
auto starts the backup blower if the pressure drops below 12.5 inches  
water.  
Since our furnace runs at -.5 inches, we have a pressure drop of at  
least 13.5 inches probably much greater.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 10:38:58 AM >>>

Jerry,

We see many methods, the preference would be a flexible 2" hose for  
serviceability  
and to allow for boiler expansion.

I have enclosed a drawing to show a hose arrangement we have supplied  
historically.

Regards,

IP7\_028391



William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01,  
William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT  
burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to  
your scanner cooling port.  
Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>  
Attached photos explain request for clarification concerning how ABB  
will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and

IP7\_028392

connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing  
2"  
flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this  
note  
on February 20 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Existing Scanner..jpg" has been removed from  
this  
note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)  
(See attached file: B949738-Model.pdf)

(See attached file: C.htm)

**From:** Jerry Finlinson  
**To:** Howard Hamilton  
**Date:** 2/20/2004 1:33:21 PM  
**Subject:** Fwd: Re: Response from ABB Regarding Connecting Cooling Air Hose to ABB Scanners

Here's Bill Clark's latest response.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <william.m.clark@us.abb.com> 2/20/2004 12:38:16 PM >>>

Jerry,

The 6" above furnace pressure is the standard. Your Hoffman blowers sound as if they would be adequate at 13.5". Our scanners are good up to 900 degrees F on the hot end. The air helps keep the electronics head temperate and creates a positive purge through the lens assembly to keep it clean. Restricting the input to 1.5" pipe would not cause a problem.

Bill

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/20/2004 01:57 PM

02/20/2004 01:57 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "Jim Knapp" <[JIM-KNAPP@ipsc.com](mailto:JIM-KNAPP@ipsc.com)>, "James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>  
Subject: Re: Response from ABB Regarding Connecting

IP7\_028394

Cooling Air Hose to ABB  
Scanners

William,  
We currently have Baily Flame On scanners with a 1.5 inch cooling  
air line,  
the air is coming from a Hoffman Flame Scanner Blower and 6" header.  
We'd like to adapt the 1.5 inch  
line to your 2" input connection. Do you think that would be  
sufficient.  
Do these new scanners take about the same cooling air as the Bailey  
Flame On system?  
We'd rather not repipe our system unless absolutely necessary.

I'm not aware of any CFM measurements, should we try and get some?

I noticed in the manual that you recommend 6" positive pressure and 30  
cfm at 120F.  
Our Hoffman blowers create pressure from 0-27 inches water.  
There is an alarm if the pressure drops below 13 inches and  
auto starts the backup blower if the pressure drops below 12.5 inches  
water.  
Since our furnace runs at -.5 inches, we have a pressure drop of at  
least 13.5 inches probably much greater.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 10:38:58 AM >>>

Jerry,

We see many methods, the preference would be a flexible 2" hose for  
serviceability  
and to allow for boiler expansion.

I have enclosed a drawing to show a hose arrangement we have supplied  
historically.

Regards,

**IP7\_028395**

William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01,  
William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT  
burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to  
your scanner cooling port.  
Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>  
Attached photos explain request for clarification concerning how ABB  
will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and

**IP7\_028396**

connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing  
2"  
flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this  
note  
on February 20 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Existing Scanner..jpg" has been removed from  
this  
note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)  
(See attached file: B949738-Model.pdf)

(See attached file: C.htm)

**From:** <james.m.clark@us.abb.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Jim Knapp" <JIM-KNAPP@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <harry.dohalick@us.abb.com>, <william.m.clark@us.abb.com>, <arnold.j.piellucci@ussev.mail.abb.com>  
**Date:** 2/23/2004 8:02:22 AM  
**Subject:** IPSC Scanners -- Packing Glands Shipped 2/11/04

FYI

----- Forwarded by James M. Clark/USIMS/ABB on 02/23/2004 09:56 AM -----

02/23/2004	James M. Clark/USIMS/ABB
08:29 AM	Dept.: Windsor Operations Phone: +860-285-6792
Internal	

To: "Jerry Finlinson" <Jerry-F@ipsc.com>  
cc:  
Subject: Re: Regarding insertion depth of ABB Scanners?(Document link: James M. Clark)

Hello Jerry -- The (48) packing glands were shipped one day later on 2/11 via Fed Ex Freight Pro # 49068456-2.

Regards -- Jim

IP7\_028398

**From:** Jerry Finlinson  
**To:** Andy Chew; Ken Hall; Matt Maragos  
**Date:** 2/20/2004 1:18:46 PM  
**Subject:** pitot tubing for IBAM's at intermountain power

Andy,

As we talked this morning, it was our understanding that Air Monitor was to provide the tubing from the pitot probes to the IBAM cabinets. The closest burner is 20 ft and the furthest one is 80 ft. That is about 600 ft per level x 8 levels = approx 5000 ft of 3/4 inch copper tubing. I suppose we could use 1/2 inch on the close ones less than 50 ft. At a price of \$.80 / ft that would be \$4000 of value.

You have already provided the required flex connections.

How should we handle purchase of this tubing. Would you prefer to purchase and ship it here, or we could purchase it here and build up a credit with you that we could apply towards calibration testing or further windtunnel testing. Our installation contract TEI has an instrumentation guy arriving here next week, if you like we could have him take care of purchasing and installing all that tubing.

You mentioned that after we get our burners set in position, we could redo a windtunnel test at those settings of spin vanes angle, and inner & outer damper positions.

Let us know if this agrees with your understanding and how you want us to proceed.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Aaron Nissen; Howard Hamilton; James Nelson; Jim Knapp; Jon Christensen;  
Phil Hailes

**IP7\_028399**



**From:** Jerry Finlinson  
**To:** william.m.clark@us.abb.com  
**Date:** 2/20/2004 11:57:55 AM  
**Subject:** Re: Response from ABB Regarding Connecting Cooling Air Hose to ABB Scanners

William,

We currently have Baily Flame On scanners with a 1.5 inch cooling air line, the air is coming from a Hoffman Flame Scanner Blower and 6" header. We'd like to adapt the 1.5 inch

line to your 2" input connection. Do you think that would be sufficient.

Do these new scanners take about the same cooling air as the Bailey Flame On system?

We'd rather not repipe our system unless absolutely necessary.

I'm not aware of any CFM measurements, should we try and get some?

I noticed in the manual that you recommend 6" positive pressure and 30 cfm at 120F.

Our Hoffman blowers create pressure from 0-27 inches water.

There is an alarm if the pressure drops below 13 inches and

auto starts the backup blower if the pressure drops below 12.5 inches water.

Since our furnace runs at -.5 inches, we have a pressure drop of at least 13.5 inches probably much greater.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <william.m.clark@us.abb.com> 2/20/2004 10:38:58 AM >>>

Jerry,

We see many methods, the preference would be a flexible 2" hose for serviceability and to allow for boiler expansion.

I have enclosed a drawing to show a hose arrangement we have supplied historically.

Regards,

William M. Clark

IP7\_028400

ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/20/2004  
12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01,  
William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT  
burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to  
your scanner cooling port.  
Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>  
Attached photos explain request for clarification concerning how ABB  
will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and  
connect it to the new ABB scanner.

IP7\_028401

ABB needs to clarify not they will want to connect from the existing 2" flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this note on February 20 2004 by William M. Clark/USPOA/ABB

Attention: Attachment "Existing Scanner.jpg" has been removed from this note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)

(See attached file: B949738-Model.pdf)

**CC:** Howard Hamilton; James Nelson; Jim Knapp

**From:** Jerry Finlinson  
**To:** joel@advancedburner.com; Sal Ferrara; Tarkel Larson  
**Date:** 6/27/2005 12:03:27 PM  
**Subject:** unit 2 ABT burner fire photos

Joel and Sal,

This past weekend, 25 June 2005, we had a burner fire one of the new unit 2 ABT burners F3.

It happened during the time that we were starting up unit 1, so the unit 2 operator was over at the unit 1 control board and didn't notice the alarm from the thermocouples that we had installed in the burner. Both the coal pipe and nozzle tip thermocouple went above 1600F.

As you can see from the attached photos, damage was extensive. The inner coal pipe has melted out the bottom and there is a slag pile inside the burner. The nozzle appears OK. The burner elbow heated up cherry red and flaked off the paint. The thermocouples and temperature switch were melted. A hole is burned through the back of the burner, so we can look right through the windbox wall into the back of the burner.

We'd like you to work with us to determine the cause of the burner fire and any possible preventive measures. Also what will be required to get it repaired. Do we need to replace the burner completely, or could it be repaired in position.

Let's also address the issue with the thermowell and how to make the thermocouple readings more reliable.

I recall you saying that there had never been a burner fire in this burner design.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Dean Wood; Howard Hamilton; James Nelson; Jon Christensen; Phil Hailes

IP7\_028403

**From:** Jerry Finlinson  
**To:** Sal Ferrara  
**Date:** 6/30/2005 4:08:25 PM  
**Subject:** Unit 2 ABT burner fire Elbow photos

Sal,

Thanks for the feedback. Today our mechanics removed the burner elbow from the F3 burner. I have included some photos of the elbow. It shows one side of the fuel distributor to be melted off. We'll pull another one of an see if it also shows some damage.

We had set our burner thermocouples to alarm at 1350 on the nozzle tip. Four of them are going high for a few minutes several times per day, so we are going to raise them to 1500F. We are trying to determine if it is some electrical noise or a real temperature increase. So far it seems to be real. We'll let you know if we find anything definitive.

It appears that the secondary air register assembly inside the burner is also melted on the bottom, so we'll likely require an entire new burner. Phil and Dean will work out the details with you.

Thermowell issues. At the very beginning, you designed two thermowells into the burner at our request. It was a 3/8 inch tube with a 1/4 inch thermocouple. However, your manufacturing made the thermowells with two 45 degree bends in each one as per the drawing. It was impossible to insert the 1/4 inch thermocouples around those bends. So we worked with Tarkel to order 1/16 inch diameter thermocouples. They are still difficult to insert, partly because they bend easily and are hard to push. So we are proposing to install a new straighter thermowell in to the nozzle tip. We need your assistance to determine the best routing for the thermowell, so that we can insert it without any bends.

On the coal pipe body readings some of our thermocouples have read low by 100 to 200 degF. We are theorizing that maybe the thermocouple is not bottomed in the thermowell, but are not sure.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Sal Ferrara" <sal@advancedburner.com> 6/30/2005 12:18:54 PM >>>

Jerry,

Based on the pictures the fire seems to have started either in the coal pipe or at the burner inlet. Where the coal pipe penetrates the floor grating, in

IP7\_028404

vicinity of the burner shutoff valve, seems to have been subject to overheating in addition to the fire damage to the back of the fuel injector.

At this point the items we would recommend investigating is the primary airflow and burner shutoff damper position history prior to and around the time either the tip or body thermocouple temperatures rose above the normal operating temperatures. We know from our testing experience in Spring 2004 that the plant experienced problems with burner shutoff valves randomly going closed while the burner was in service (this is potential for causing fire in coal pipe or fuel injector). Also see if any abnormal PA flow of shutoff damper conditions could be correlated with temperature excursions on other burners (Dean Wood mentioned in phone discussion that there are some other burners that experience repeatable high temperatures excursions @ once or twice per day).

Also at first available outage, the plant should remove an elbow on one, or several, burners that experience periodic temperature excursions to inspect ABT's elbow fuel distributor, fuel injector barrel and burner shutoff valve for signs of overheating. I do not know how your temperature alarm is configured however it would be best if triggered by a rate of temperature change, rather than a specific temperature limit. If a rate of change logic is not utilized for the alarm, then we would recommend setting the alarm point @ 100 degree F above the temperature measured during normal operation.

We are working on providing a price for complete burner replacement. If the secondary air register assembly is OK you may only need to replace the fuel injector assembly, although you most likely need an outage to pull the fuel injector and inspect the burner to determine this.

You also mentioned the thermowell and making the thermocouple reading more reliable. I am not sure what this means, since I am not aware that there has been a temperature measurement reliability issue on either the fuel injector tip or body readings. Please provide more detail on this.  
Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Monday, June 27, 2005 2:03 PM

To: [joel@advancedburner.com](mailto:joel@advancedburner.com); [sal@advancedburner.com](mailto:sal@advancedburner.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com)

Cc: [nelsonj@compassminerals.com](mailto:nelsonj@compassminerals.com); Dean Wood; Howard Hamilton; Jon Christensen; Phil Hailes

Subject: unit 2 ABT burner fire photos

Joel and Sal,

This past weekend, 25 June 2005, we had a burner fire one of the new unit 2 ABT burners F3.

It happened during the time that we were starting up unit 1, so the unit 2 operator was over at the unit 1 control board and didn't notice the alarm from the thermocouples that we had installed in the burner. Both the coal pipe and nozzle tip thermocouple went above 1600F.

IP7\_028405

As you can see from the attached photos, damage was extensive. The inner coal pipe has melted out the bottom and there is a slag pile inside the burner. The nozzle appears OK. The burner elbow heated up cherry red and flaked off the paint. The thermocouples and temperature switch were melted. A hole is burned through the back of the burner, so we can look right through the windbox wall into the back of the burner.

We'd like you to work with us to determine the cause of the burner fire and any possible preventive measures. Also what will be required to get it repaired. Do we need to replace the burner completely, or could it be repaired in position.

Let's also address the issue with the thermowell and how to make the thermocouple readings more reliable.

I recall you saying that there had never been a burner fire in this burner design.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

---

This message scanned for viruses by CoreComm

CC: Bill Morgan; Dean Wood; Howard Hamilton; Joel Vatsky; Jon Christensen; Ken Nielson; [nelsonj@compassminerals.com](mailto:nelsonj@compassminerals.com); Phil Hailes; Tarkel Larson

**IP7\_028406**

**From:** Jerry Finlinson  
**To:** Howard Scott  
**Date:** 3/31/2004 9:22:13 AM  
**Subject:** Re: IBAM purge status.

Howard,

I called Air Monitor to discuss the issue of tubing disconnecting from the transmitters. It wasn't Monday night when they blew off, but happened when TEI was doing the leak testing. We did get them all reassembled and working in the past couple of nights.

In our discussions we came to the conclusion that the internal protective tubing blew off during air leak testing because we put plugs in the end of the piping. When we do a normal purge, the lines pressurize for 1 minute, then allow 1 minute of recovery time for the pressure to bleed down through the pitot ports. However, if the lines have plugs in the end, then the pressure doesn't decay, then when the shuttle valve opens up, the transducer is exposed to 100 psi, which exceeds the design limit and blows the tubes off. Now that we have the pitot tubes connected, we shouldn't have this problem any longer. Let me know if you hear of any further problems.

By the way, the IBAMs have the latest revision of air monitor purge hardware, so it doesn't include the little 5 micron filter and orifice and it doesn't require the 50 psi air regulator.

We have some of the burners with unreasonably high and low air flow readings, which we'll be investigating.

We may do some windbox internal leak checking on a couple of the burners that have low readings.

We may be able to do that this upcoming weekend when they shut down to remove screens from the valves.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Howard Scott 3/30/2004 4:15:34 PM >>>

Jerry, where are we at on our thinking about whether or not we need air regulators installed to keep from having the little tubes on the back blowing off? I heard that a lot of them blew off last night.

---

>>> Jerry Finlinson 3/30/2004 4:09:27 AM >>>

Between Mike Melville and Russ Johnson, they got the IBAM transmitters all working Monday night.

However, D & H, don't have the flex connections installed yet, so they don't read live values. It would be good to get those installed Tuesday.

Also we noticed a few with unreasonably low values, including E1 & E2.

Please have someone snoop test those again. It's best to leave the pitot tubes connected during a snoop test,

so that after the purge the line pressure will bleed down and not overpressurize the transducer.

**IP7\_028407**



We will need to enter the new outer air damper distance into the DCS, so that the flows will be calculated accurately.  
Aaron should have a list of the current settings.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**CC:** Aaron Nissen; Bill Morgan; Garry Christensen; Howard Hamilton; James Nelson; Jim Knapp; John Fritzges; Jon Christensen; Ken Nielson; Wes Bloomfield

**From:** Jerry Finlinson  
**To:** Bill Morgan; Howard Hamilton; James Nelson; Ken Nielson; Phil Hailes; Salvatore Ferrara  
**Date:** 2/5/2004 6:46:27 PM  
**Subject:** ABT burner pitot manifold leak photos - AMC WO NO 50633

FYI,

Today I observed TEI Jon McCarra doing a leak check on the ABT burner pitot manifold silver brazing welds.

Each manifold has 11 joints on the total pressure (TP) and 11 joints on the static pressure (SP). 2 on each side of the 3 pitot couplings, 4 on each side of the cross and a pipe to tubing joint. I have enclosed representative photos of the leak check soap bubbles showing leaks, some leaks were small, a couple were very large.

Here's a list of the leaks we found on the 9 burners staged on the rear of the boiler.

7th floor

CW6 - SP, 1 leak on coupling to pitot

CW3 - TP = 3 leaks, pipe to tubing, top leg of cross, 11:00 pitot coupling

CW14 2 leaks, SP = bottom 6:00 coupling, TP = bottom 6:00 coupling

6th floor

CW8 - 1 leak, TP - top of cross

CW4 - 2 leaks, SP tube to pipe, and 11:00 coupling,

CW5 - 8 leaks, SP - 3 sides of cross, top 11:00 coupling, TP = 2 sides of cross, bottom 6:00 coupling

5th floor

All three burners had no leaks, they appeared to be better welded.

As a percent of burners, 66% of the burners had leaks in the manifold.

As a percent of joints from the total of  $9 \times 22 = 198$  joints,  $17/198 = 8.5\%$  of joints.

What weld repair remedy would you suggest?

We will check the burners on the boiler front tomorrow.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/4/2004 8:38:38 AM >>>

Jerry,

The tube joints are joined by silver brazing since the soldering process has too low of a temperature rating for our purpose. Andy Chew has it backwards in his response to you. Silver soldering is rated for a working temperature in the 400 to 500°F range. Silver brazing is

IP7\_028409

typically rated upwards of 1100°F working temperature range.  
Concerning the appearance of the brazed joints, PCW did not clean all the joints in which case you see some of the flux material used in the brazing process. PCW has assured us that the joints are good and will not leak.

Let me know if you have other questions.

Regards,

Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Tuesday, February 03, 2004 8:17 PM

To: Howard Hamilton; James Nelson; Phil Hailes

Cc: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Subject: Fwd: RE: ABT burner pitot photos - AMC WO NO 50633

FYI,

Here's Air Monitor's response to the photos of the IBAM manifold welding.

Hopefully, they did use silver solder, not brazing.

Sal, please advise.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/3/2004 4:34:23 PM >>>  
Jerry,

Air Monitor agreed to ABT's suggestion of using a sealing method other than

Heliarc welding. Originally they mentioned brazing but we insisted on silver solder because the temperature rating of the silver solder joint is

much higher than that of brazing. You should ask ABT about this but it appears they did not clean the solder joints. They may be good joints and

just not look very pretty. You want to make sure they are pressure tested

before going into service. When we modified the probes we only added additional Total pressure sensor holes to the production manifolds.

Additional Static pressure sensor holes were determined to be not necessary

as they did not improve the performance accuracy of the device. We will be

providing an as built drawing which will include the pressure sensor details. Again, I am expecting to have the final burner test report anytime

now and I will forward to you then.

Regards,

**IP7\_028410**

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
Tel.: 707-521-1709  
Fax: 707-526-2825  
Email: [achew@airmonitor.com](mailto:achew@airmonitor.com)

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Tuesday, February 03, 2004 2:31 PM  
To: Andy Chew; Matt Maragos  
Cc: [khpquip@earthlink.net](mailto:khpquip@earthlink.net)  
Subject: Fwd: ABT burner pitot photos

I'm sending this again, since our email was down yesterday.  
We do know that

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Jerry Finlinson 2/2/2004 2:14:00 PM >>>  
FYI,

We have received our first burner from ABT.  
The Air Monitor pitot manifolds look nice, except for the welds.  
The T's are stainless, it seems preferable to have a nice weld rather  
than the brazing.  
I'm not sure it's what you had in mind. Take a look at the enclosed  
photos.

I'd like to know how you modified the pitots inside. I can see the  
additional holes you drilled in front of the high pressure tube, but I  
can't see any additional holes on the side of the other tube. How  
many  
holes is it supposed to have?  
Are they drilled in the backside? Please provide us a drawing of the  
as built tubes in case we ever need to order another.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

IP7\_028411

**CC:** Andy Chew; Ken Hall; Matt Maragos

**From:** Jerry Finlinson  
**To:** James Nelson; Jon Christensen  
**Date:** 3/3/2004 12:50:18 PM  
**Subject:** Fwd: RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

We need to evaluate this offer and see if it's reasonable to us.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Andy Chew <achew@airmonitor.com> 3/3/2004 12:38:08 PM >>>  
Jerry,

Air Monitor agrees to provide IPSC with a \$6,000 credit in lieu of providing the tubing and fittings for the signal connections from the burner fronts to the transmitter/purge cabinets as per AMC proposal number 102403-1.1 dated 10-24-2003 for Air Monitor work order number 50633 and ABT PO A03-008-413. This \$6,000 credit can be used for future wind tunnel performance testing in Air Monitor's test facility in Santa Rosa, CA.

I will reiterate that we think copper tubing is a better choice for use with our equipment than carbon steel pipe for reasons previously stated.

Thank you.

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

-----Original Message-----

From: Andy Chew  
Sent: Monday, March 01, 2004 1:22 PM  
To: 'Jerry Finlinson'  
Subject: RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Jerry:

AMC is generally OK with using CS pipe for signal lines contingent upon:

1. Threaded connections are minimized and wherever possible connections are to be welded.
2. Something other than carbon steel unions or pipe couplings be used as the signal line 'break' fitting. With time and vibration these are prone to

**IP7\_028413**

leakage. We were just involved with utility in diagnosing and fixing this problem.

3. The plant air used for purge is dry. If it has moisture eventually scale/rust will occur inside the pipe. That scale/rust can flake off and eventually end up plugging the sensing holes from the inside.

If you were choosing to use copper, which is what we recommend after SST tubing, is doing each signal line with a MPT x sweat fitting at the burner wall and flex hose connection, copper tube with sweat straight connectors or elbows to connect the sections, a copper sweat union near the AMC enclosure and another MPT x sweat fitting to connect to the enclosure. Nice thing about copper is that if there is ever a need to remove part of the signal line the repair is quite easy with a few straight connectors.

Again, I will be getting back to you on what it would have cost us in material to make these connections.

Regards,

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Monday, March 01, 2004 9:26 AM  
To: Andy Chew  
Subject: RE: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Andy,

Thanks for checking into that.  
As it turns out, my boss doesn't want me to use tubing because our plant standard is to use welded carbon steel piping in this application. So we've already got that steel piping on order. Let's work out a reasonable credit with you for how much the tubing would have cost. If it was copper it would have been around \$6000 and if it was stainless it would have been \$12K to \$15K. I do believe the spec said stainless, didn't it?

Anyway, let's work up a mutually agreeable credit for that and we'll apply it towards some additional windtunnel testing after we know where our burners are set or decrease the price a bit.  
Thanks,  
Jerry

**IP7\_028414**

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/27/2004 9:52:47 AM >>>  
Jerry,

I will have quotes from our copper tubing/fitting vendors soon to compare.  
A couple of things:

All of the signal connections on the cabinets, burner fronts and flex connections are either 1/2" male or 1/2" female pipe. Why are the fittings quoted 3/4" MNPT? I think they should be both 1/2" MNPT x 3/4" tube sweat and 1/2" FNPT x 3/4" tube sweat. You will eliminate the need to provide more fittings to reduce from 3/4" to 1/2" threaded pipe connections.

I reviewed the proposal and it indicates AMC will supply "tubing, fittings, expansion joints/flex connections" but there is no mention of tube trays or supports. I asked our sales group about this and they confirmed trays/supports are not our scope.

Thank you.

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
PH 707-521-1709  
FX 707-526-2825

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Friday, February 27, 2004 6:58 AM  
To: Andy Chew  
Subject: ABT/Intermountain Burner Tubing Cost (AMC WO NO 50633)

Andy,

We got a quote together from our TEI contractor.  
They are recommending that we go with soft copper tubing

3/4" soft copper tubing 6100 ft x .76/ft = \$4636  
3/4" M NPT x 3/4" tube fitting 192 x \$8 = 1536  
3/4 brass tube coupling 300 x \$9 = \$2700  
6" tube tray 1120 ft x \$6/ft = \$6720

Total material cost = \$15592

installation = \$54,141 We'll be covering this cost, but it seems very high.

**IP7\_028415**



They also provided an estimate for hard copper tubing which was \$15686 for pipe and fittings, but are recommending us to go with the soft copper.

Let us know if this seems reasonable to you.  
Should we go ahead and order the tubing and fittings or do you want to provide them and get them here by the end of next week?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/24/2004 10:11:04 AM >>>  
Jerry,

Any word on the tubing cost?

Thanks.

Andy

-----Original Message-----

From: Andy Chew  
Sent: Friday, February 20, 2004 1:46 PM  
To: 'Jerry Finlinson'  
Subject: RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

Jerry,

Yes, please get a written quote and advise. I think we should stick with the 3/4" copper tube in straight-rigid plumbing grade for use with soldered (sweat) joint connections for all the runs both short and long. It will be simpler and cleaner that way.

Let me know.

Thanks.

Andy

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Friday, February 20, 2004 1:21 PM  
To: Andy Chew  
Subject: RE: ABT/Intermountain Burner Testing Spin Vane Settings (AMC WO NO 50633)

IP7\_028416

Andy

My cost of 80 cents per foot was not a real quote.

I called the local hardware store and he said that 100 ft would be 99 c/ft, but it would be much cheaper to order 5000 ft, so maybe we could get it for 50 c or so. Do you think we should use ½ inch on the runs less than 50 ft?

Would you like me to get a real quote to compare?

We are talking rigid copper pipe that solders together, right?

Later, Jerry

Jerry Finlinson, Engineer

Intermountain Power Service Corp

850 West Brush Wellman Rd

Delta, UT 84624

435-864-6466

fax 0776/6670

[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/20/2004 2:14:45 PM >>>

Jerry,

I am getting a quote on our end for the 3/4" tubing to compare with your tubing cost of 0.80 cents per foot. If it is less expensive for you to supply then we are OK with the option to provide IPSC with a credit against future technician labor and/or wind tunnel testing.

I will get back to you on or before Monday 2/23/04.

Thank you.

Andy

CC: Bill Morgan; Howard Hamilton; Ken Nielson

IP7\_028417

**From:** Jerry Finlinson  
**To:** Howard Scott; John Fritzges  
**Date:** 3/11/2004 7:01:56 PM  
**Subject:** TC JBX's mounting on ABT burners.

Howard,

TEI has started remounting the TC JBX's on the burner's on 5th floor North = G mill.  
Can you review their installation? In some cases they need to move it to the other side  
of the burner and in other cases it is too low and behind the handrail.  
Let's work with them to figure a good position.

Could you also take them the temp switches and figure out a way to mount them?  
We could move them into smaller JBX's possibly, then they would fit better.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; Jim Knapp

**IP7\_028418**

**From:** Jerry Finlinson  
**To:** Howard Scott; James Nelson; Jim Knapp; John Fritzges  
**Date:** 3/3/2004 2:54:10 PM  
**Subject:** Burner pipe temp switches

FYI,

There seems to be a misunderstanding about the temperature switches on the burner pipes. These are the ones in small box attached to the outside of the windbox on the burner pipe. Operations considers them very useful as they have received early notification of burner fires in the past, they'd like to see them reinstalled on the new burners. They are already set up in the I/O and in the alarms and control system and they don't see any reason to remove them.

Has ABT said that we won't be needing them?

Hopefully, I&C has saved the switches and boxes for reinstallation.  
If not let us know and we'll see what it takes to get new ones.  
Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; Jon Christensen

IP7\_028419

**From:** Jerry Finlinson  
**To:** Howard Scott  
**Date:** 3/16/2004 5:58:24 PM  
**Subject:** Thermocouple junction boxes missing

FYI,

We still are missing 6 thermocouple junction boxes that go up on the burners.  
Did some of the guys remove them and stash them away somewhere?

Also they are missing one temperature switch for the burner elbows.  
Has anyone seen that?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; Jim Knapp; John Fritzges

IP7\_028420

**From:** Jerry Finlinson  
**To:** Howard Scott  
**Date:** 3/12/2004 11:16:16 AM  
**Subject:** ABT burners TC's ordered from Thermocouple Technologies ship 3/26

FYI,

I just called Thermocouple Technologies who is making our new burner thermocouples.  
215-529-9394

order number A03-008-416

currently they are scheduled to ship on 3/26.

It's possible to install them online, but we'd prefer to have them in prior to startup.

I asked if it might be possible to send quicker.

I also asked if they could make them 3 or 4 inches longer, so that we could have a longer standpipe.

Do you suppose it would have interference with the elbow flange if it was longer?

They should be getting back to me today.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Scott 3/12/2004 6:44:31 AM >>>

Jerry, as per our conversation the other day, we need to connect the box to the flex conduit and then mount the box on standoffs at a position that will allow the boiler to grow without ripping the conduit out of the box. The boiler grows at least 12" down on the 5th floor.

>>> Jerry Finlinson 3/11/2004 7:01:43 PM >>>

Howard,

TEI has started remounting the TC JBX's on the burner's on 5th floor North = G mill.  
Can you review their installation? In some cases they need to move it to the other side of the burner and in other cases it is too low and behind the handrail.  
Let's work with them to figure a good position.

Could you also take them the temp switches and figure out a way to mount them?

We could move them into smaller JBX's possibly, then they would fit better.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**CC:** Howard Hamilton; James Nelson; Jim Knapp; Sal Ferrara; Tarkel Larson

IP7\_028421

**From:** Jerry Finlinson  
**To:** Aaron Nissen; Garry Christensen; James Nelson  
**Date:** 3/31/2004 4:02:53 PM  
**Subject:** Burner and Windbox temps 31mar04

FYI,

Jim Knapp and I went out Wednesday 31mar04 2pm and measured the windbox and burner temperatures on U2.

This was done at load of 885 MW with F mill out of service and cooling air in F and the OFA.

Secondary air temp is 687 F,

B1 windbox = 657

B6 windbox = 658

OFA SW = 658 F, Flow = 62,000 lb/hr

OFA SE = 661 F, Flow = 0 lb/hr, suspect transmitter tubes disconnected.

OFA NW = 673 F, Flow = 104,000 lb/hr

OFA SW = 672 F, Flow = 0 lb/hr, suspect transmitter tubes disconnected.

Conclusion, south side appears uniform but about 30 degrees cooler than secondary air duct temp.

North side is about 15 degrees cooler than secondary air temp.

Top row burners E1, E3, D1, D3 with thermocouple welded on:

front, backplate

E1: 840, 668

E3: 918, 673

D1: 932, 678

D3: 983, 486 ??

Conclusions: backplate temp is similar to secondary air temperature, so it's not receiving heavy radiation from fireball.

D3 was hotter than E3, possibly because of F mill being OOS on that side. Also, in general we see the north side secondary air hotter than south side. Why?

These temps are well within specs of the burner design.

Later, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

IP7\_028422

**CC:** Bill Morgan; Dave Spence; Howard Hamilton; Jim Knapp; Jon Christensen;  
Jon Finlinson; Ken Nielson; Sal Ferrara; Tarkel Larson



**From:** Jerry Finlinson  
**To:** Howard Hamilton  
**Date:** 3/14/2004 4:06:33 PM  
**Subject:** Fwd: CAMS SENSING LINES ON BURNER FRONTS

Thanks for pointing that out.

I'll go take a look.

Yes they do need to allow for the coal pipes to move downwards 10 to 12 inches.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> John Fritzges 3/14/2004 3:21:55 PM >>>

Jerry,

Mike Melville pointed something out to me Sunday. On the back side of the Boiler, G Burner Level, the CAMS sensing lines are mounted just below the support braces for the coal pipe going up to the next level. It looks as though when the boiler expands, the brace might impinge on the sensing lines. I'm not sure how the coal pipes move when the boiler heats up but the boiler should grow downward. You might want to take a look at it and see what you think. Get ahold of me if you want me to be there when you look at it.

**CC:** John Fritzges; Mike Melville

IP7\_028424

**From:** Jerry Finlinson  
**To:** Howard Hamilton  
**Date:** 12/18/2003 9:44:07 AM  
**Subject:** Fwd: RE: IPP Burner TC's Type E

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 12/18/2003 7:39:22 AM >>>

Jerry,

I stopped production on the probes until you make your decision. At this point there would not be any impact on price to make the change to Type E however delivery of TC's will be delayed until at least 1st week of February. In this case the thermocouples will need to be installed on site at IPP. Based on this, please let me know ASAP which way you want to go (TYPE E or Type K).

-----Original Message-----

From: Salvatore Ferrara [<mailto:sal@advancedburner.com>]  
Sent: Thursday, December 18, 2003 9:00 AM  
To: 'Jerry Finlinson'  
Cc: 'Bill Morgan'; 'Jim Knapp'; 'James Nelson'; 'Phil Hailes'  
Subject: RE: IPP Burner TC's Type E

Jerry,

We ordered Type K thermocouples. I'll check on changing it and what the overall impact will be on price and delivery. This will definitely impact delivery date of the first burner assemblies scheduled to complete the first week of January.

The thermocouple location in the burner front are shown on arrangement drawing 03008-100-A00-DO (Items G1 & G2). G1 measures the fuel injector tip (coal nozzle) temperature and G2 measures the fuel injector barrel temperature.

Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Wednesday, December 17, 2003 6:10 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: Bill Morgan; Jim Knapp; James Nelson; Phil Hailes  
Subject: IPP Burner TC's Type E

Sal,

I understand you are supplying 2 thermocouples on each new burner. Could you let us know where you plan to locate them?

Just so you know, we currently have type E thermocouples on our existing burners.

**IP7\_028425**

We'd appreciate it if you used the same type E, so that we wouldn't need to pull new extension wire back to the data aquisition IO.  
Let us know if different.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466      fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 2/23/2004 3:05:58 PM  
**Subject:** RE: ABT burner thermocouple installation difficulties

Jerry,

Per my discussion with the PCW fab shop, tubes were bent with 4" centerline radius die. In discussion with the thermocouple supplier, the .312" tube ID with 4" radius bends is sufficient for the .187" diameter thermocouple to pass thru. Our experience with the TC's is they are pretty flexible however they don't just slide in. It takes a little effort to work the TC through the tube but our experience is that they will work through. Twisting, by holding onto the 3/16 sheath at the same time you're pushing in normally helps (just be careful not to twist the head portion of the TC assembly).

Let me know how this works.

Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Friday, February 20, 2004 3:51 PM  
To: sal@advancedburner.com  
Cc: Howard Hamilton; Howard Scott; Jim Knapp; James Nelson; John Fritzges; Phil Hailes  
Subject: ABT burner thermocouple installation difficulties

FYI,

Yesterday, I took one of the thermocouples out and tried sliding it down the thermowells that are installed in the burner. It would only slide in about 13 inches before hitting a tight bend in the thermowell. Apparently your installers are making some sharp corner bends on the thermowell that's making it very difficult to insert.

Have you tried inserting one?

The type E thermocouples that we have are 3/16 inch diameter and don't bend so easy.

Maybe we'll need to get some 1/8 inch diameter thermocouples.

I noticed that there are some sharp bends on the thermocouple out near the tip as well.

The bends are only 10 to 15 degrees, but they have a sharp corner, it would have been better to make it very gradual, then the thermocouple would slide in easily.

Please advise on your recommended solution.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd

IP7\_028427

Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** "Howard Hamilton" <howard-h@ipsc.com>, "Howard Scott"  
<HOWARD-S@ipsc.com>, "Jim Knapp" <JIM-KNAPP@ipsc.com>, "James Nelson"  
<JIM-N@ipsc.com>, "John Fritzges" <JOHN-F@ipsc.com>, "Phil Hailes"  
<Phil-H@ipsc.com>, "Tarkel Larson" <tarkel@advancedburner.com>

**From:** Jerry Finlinson  
**To:** Howard Hamilton  
**Date:** 3/31/2004 10:07:32 AM  
**Subject:** Re: Contract 04-45606, Replacement Thermocouples

Yes, we'll have I&C insert these and connect them up.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Howard Hamilton 3/31/2004 9:58:14 AM >>>  
I assume that I&C is installing these thermocouples. Please advise.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 3/31/2004 9:39:06 AM >>>  
Howard,

Attached for your information is the "pick ticket" for shipment of the  
96 replacement thermocouples that shipped yesterday by UPS ground.

Regards,

Sal

IP7\_028429

**From:** Jerry Finlinson  
**To:** Salvatore Ferrara  
**Date:** 4/20/2004 11:28:24 AM  
**Subject:** RE: More ABT burner thermocouple installation difficulties

FYI,

We just tried installing the new 1/16 inch diameter thermocouples on the ABT burners. The thermocouples fit nicely in the existing thermocouple wells. However, there is a problem with how the thermocouple head isn't supported.

Notice in the enclosed photo, how the weight of the thermocouple head is supported only by the thermocouple wire. Then we also need to attach a conduit and cable to the head. This will bend down the thermocouple wire and probably break it eventually. We need to come up with a better attachment or support for the thermocouple head.

Because the thermocouple is brazed into the fitting it's difficult to replace these fittings with a nipple that could support the weight. Would we be able to weld the steel and brass fittings together. Any suggestions?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/27/2004 9:54:01 AM >>>

Jerry,

I ordered 96 replacement thermocouples. They will be 1/16" diameter, simplex type, as shown on attached sketch 10-4881. The shop made a mockup of the tube run and tried a 1/8" diameter thermocouple and it was still very difficult to insert. The 1/16 diameter type inserts easily. We have to go to compression type (spring loaded type doesn't come in 1/16" diameter). The compression fitting will provide adjustability to insure the tip is inserted fully and bottoms out at end of tube. Delivery is being expedited however material takes 2 weeks to acquire. The promised delivery is four weeks (by 4/2/04).

Regards,  
Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Wednesday, February 25, 2004 9:57 AM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: Howard Hamilton; Howard Scott; James Nelson; John Fritzges; Phil Hailes  
Subject: RE: ABT burner thermocouple installation difficulties

Sal,

I had my I&C supervisors go out with me to attempt to put the

IP7\_028430

thermocouples into the wells.

With much struggle and grabbing them with pliers we were able to get the short one in.

We are nervous about damaging the thermocouple sheath.

We also got a 1/8 inch diameter copper rod and inserted it in, it went easier, but was still twisted

up. You should specify that the bend radius should not be less than 10 to 12 inches. In the case of the short

thermocouple is a bend even necessary? Couldn't the thermowell just be angled down to the spot where it is welded on?

We think at this point that it would be best to switch all the thermocouples to 1/8 inch diameter.

Can that be done in the time frame? You can have your guy take a look at it when he is here tomorrow.

We are worried that it's such a struggle to get the 3/16 diameter ones in the pipe that it will

be nearly impossible to get them out again. We also don't want to use organic lubricant because

it will carbonize in service and make it difficult to reinstall another thermocouple.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/23/2004 3:02:08 PM  
>>>

Jerry,

Per my discussion with the PCW fab shop, tubes were bent with 4" centerline radius die. In discussion with the thermocouple supplier, the

.312" tube ID with 4" radius bends is sufficient for the .187" diameter

thermocouple to pass thru. Our experience with the TC's is they are pretty flexible however they don't just slide in. It takes a little effort to work the TC through the tube but our experience is that they will work through. Twisting, by holding onto the 3/16 sheath at the same

time you're pushing in normally helps (just be careful not to twist the

head portion of the TC assembly).

Let me know how this works.

Sal

IP7\_028431



-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Friday, February 20, 2004 3:51 PM

To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Cc: Howard Hamilton; Howard Scott; Jim Knapp; James Nelson; John Fritzges; Phil Hailes

Subject: ABT burner thermocouple installation difficulties

FYI,

Yesterday, I took one of the thermocouples out and tried sliding it down the thermowells that are installed in the burner.

It would only slide in about 13 inches before hitting a tight bend in the thermowell. Apparently your installers are making some sharp corner

bends on the thermowell that's making it very difficult to insert.

Have you tried inserting one?

The type E thermocouples that we have are 3/16 inch diameter and don't bend so easy.

Maybe we'll need to get some 1/8 inch diameter thermocouples.

I noticed that there are some sharp bends on the thermocouple out near the tip as well.

The bends are only 10 to 15 degrees, but they have a sharp corner, it would have been better to make it very gradual, then the thermocouple would slide in easily.

Please advise on your recommended solution.

Thanks, Jerry

Jerry Finlinson, Engineer

Intermountain Power Service Corp

850 West Brush Wellman Rd

Delta, UT 84624

435-864-6466

fax 0776/6670

[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

CC: Howard Hamilton; Howard Scott; James Nelson; John Fritzges; Phil Hailes; Tarkel Larson

IP7\_028432

**From:** Jerry Finlinson  
**To:** Howard Hamilton  
**Date:** 1/20/2004 12:36:54 PM  
**Subject:** Re: Shipping Schedule for ABT Burners and Ancillary Equipment

Howard,

I see that all this equipment is arriving on week of 9 Feb, which is the week I'll be gone to an ABB controls training class in Ohio. So we'll need to have Ken, Bill or Phil assist with the receiving of these items.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Howard Hamilton 1/20/2004 10:13:17 AM >>>

Per Sal Farrar of ABT on 1/20/04 the following is the latest shipping schedule for the burners and ancillary equipment.

1. The Burners will start arriving the week of 1/26/03. There will be 3 truck shipments each week until all 48 burners are on site. There will be 3 to 4 burners on each truck. The last truck is scheduled to leave 2/20/03 and arrive on site around 2/25/04. The ABT Burners will be coming from Passaic County Welders out of New Jersey. Sal has not awarded a shipping contract yet so I can't tell you the trucking company ABT will be shipping the burners with.

Darrell: The Computer model for the burners shows a weight of 6100 lbs. ABT nor the trucking company will be weighing the burners so their will be no official weight. However, IPSC has a calibrated scale and if you want we can get a true weight of the burners if you are interested. Let men know and I will make arrangements with Operations to have a burner weighed.

The first truck could be escorted to the scales upon arriving and leaving to get a gross and net weight of the truck and thus a weight of the burners.

2. The horizontal and vertical castings for the burner elbows will be arriving the week of 2/9/04. The castings will be coming from JMS Fabricating System out of Lathrup, Pennsylvania. JMS will also be sending a ceramic kit for fitting the vertical castings into the coal elbows. The kit will include diamond saws for cutting the ceramic. All castings and repair kits should be coming on one truck.

Darrell: Sal is sending drawings by snail mail that show the placement of the vertical castings. The drawings are being sent to Phil Hailes.

3. The 48 ABB Flame Scanners will be coming in the week of 2/09/04 on one truck. ABB is out of Massachusetts.

Darrell: Jerry Finlinson of IPSC will handle the unloading arrangements for these flame scanners. Contact Jerry should they come to you

4. Purge panels from Air Monitor will be arriving on site the week of 2/09/04 all 8 should be in one truck. Air Monitor is out of Santa Rosa, California.

**IP7\_028433**

Darrell: Jerry Finlinson of IPSC will handle the unloading arrangements for these purge panels. Contact Jerry should they come to you.

5. Thermocouples for all 48 burners will be arriving the week of 02/09/04. They will be coming from TTE located in Pennsylvania.

Darrell: No thermocouples were installed on the burners. TEI will need to install these thermocouples per drawings and direction of Jerry Finlinson.

**CC:** Bill Morgan; Ken Nielson; Phil Hailes

**From:** Jerry Finlinson  
**To:** Bill Morgan; Howard Hamilton; James Nelson; Ken Nielson; Phil Hailes; Salvatore Ferrara  
**Date:** 2/5/2004 6:46:27 PM  
**Subject:** ABT burner pitot manifold leak photos - AMC WO NO 50633

FYI,

Today I observed TEI Jon McCarra doing a leak check on the ABT burner pitot manifold silver brazing welds.  
Each manifold has 11 joints on the total pressure (TP) and 11 joints on the static pressure (SP). 2 on each side of the 3 pitot couplings, 4 on each side of the cross and a pipe to tubing joint. I have enclosed representative photos of the leak check soap bubbles showing leaks, some leaks were small, a couple were very large.

Here's a list of the leaks we found on the 9 burners staged on the rear of the boiler.

7th floor

CW6 - SP, 1 leak on coupling to pitot  
CW3 - TP = 3 leaks, pipe to tubing, top leg of cross, 11:00 pitot coupling  
CW14 2 leaks, SP = bottom 6:00 coupling, TP = bottom 6:00 coupling

6th floor

CW8 - 1 leak, TP - top of cross  
CW4 - 2 leaks, SP tube to pipe, and 11:00 coupling,  
CW5 - 8 leaks, SP - 3 sides of cross, top 11:00 coupling, TP = 2 sides of cross, bottom 6:00 coupling

5th floor

All three burners had no leaks, they appeared to be better welded.

As a percent of burners, 66% of the burners had leaks in the manifold.  
As a percent of joints from the total of  $9 \times 22 = 198$  joints,  $17/198 = 8.5\%$  of joints.

What weld repair remedy would you suggest?

We will check the burners on the boiler front tomorrow.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/4/2004 8:38:38 AM >>>

Jerry,

The tube joints are joined by silver brazing since the soldering process has too low of a temperature rating for our purpose. Andy Chew has it backwards in his response to you. Silver soldering is rated for a working temperature in the 400 to 500°F range. Silver brazing is

IP7\_028435

typically rated upwards of 1100°F working temperature range.  
Concerning the appearance of the brazed joints, PCW did not clean all the joints in which case you see some of the flux material used in the brazing process. PCW has assured us that the joints are good and will not leak.

Let me know if you have other questions.

Regards,

Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Tuesday, February 03, 2004 8:17 PM

To: Howard Hamilton; James Nelson; Phil Hailes

Cc: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Subject: Fwd: RE: ABT burner pitot photos - AMC WO NO 50633

FYI,

Here's Air Monitor's response to the photos of the IBAM manifold welding.

Hopefully, they did use silver solder, not brazing.

Sal, please advise.

Jerry

Jerry Finlinson, Engineer

Intermountain Power Service Corp

850 West Brush Wellman Rd

Delta, UT 84624

435-864-6466

fax 0776/6670

[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/3/2004 4:34:23 PM >>>

Jerry,

Air Monitor agreed to ABT's suggestion of using a sealing method other than

Heliarc welding. Originally they mentioned brazing but we insisted on silver solder because the temperature rating of the silver solder joint is

much higher than that of brazing. You should ask ABT about this but it appears they did not clean the solder joints. They may be good joints and

just not look very pretty. You want to make sure they are pressure tested

before going into service. When we modified the probes we only added additional Total pressure sensor holes to the production manifolds.

Additional Static pressure sensor holes were determined to be not necessary

as they did not improve the performance accuracy of the device. We will be

providing an as built drawing which will include the pressure sensor details. Again, I am expecting to have the final burner test report anytime

now and I will forward to you then.

Regards,

IP7\_028436

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
Tel.: 707-521-1709  
Fax: 707-526-2825  
Email: [achew@airmonitor.com](mailto:achew@airmonitor.com)

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Tuesday, February 03, 2004 2:31 PM  
To: Andy Chew; Matt Maragos  
Cc: [khppquip@earthlink.net](mailto:khppquip@earthlink.net)  
Subject: Fwd: ABT burner pitot photos

I'm sending this again, since our email was down yesterday.  
We do know that

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Jerry Finlinson 2/2/2004 2:14:00 PM >>>

FYI,

We have received our first burner from ABT.  
The Air Monitor pitot manifolds look nice, except for the welds.  
The T's are stainless, it seems preferable to have a nice weld rather  
than the brazing.  
I'm not sure it's what you had in mind. Take a look at the enclosed  
photos.

I'd like to know how you modified the pitots inside. I can see the  
additional holes you drilled in front of the high pressure tube, but I  
can't see any additional holes on the side of the other tube. How  
many  
holes is it supposed to have?  
Are they drilled in the backside? Please provide us a drawing of the  
as built tubes in case we ever need to order another.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

IP7\_028437

**CC:** Andy Chew; Ken Hall; Matt Maragos

**From:** Jerry Finlinson  
**To:** Sal Ferrara  
**Date:** 2/20/2004 1:51:17 PM  
**Subject:** ABT burner thermocouple installation difficulties

FYI,

Yesterday, I took one of the thermocouples out and tried sliding it down the thermowells that are installed in the burner.

It would only slide in about 13 inches before hitting a tight bend in the thermowell. Apparently your installers are making some sharp corner bends on the thermowell that's making it very difficult to insert.

Have you tried inserting one?

The type E thermocouples that we have are 3/16 inch diameter and don't bend so easy.

Maybe we'll need to get some 1/8 inch diameter thermocouples.

I noticed that there are some sharp bends on the thermocouple out near the tip as well.

The bends are only 10 to 15 degrees, but they have a sharp corner, it would have been better to make it very gradual, then the thermocouple would slide in easily.

Please advise on your recommended solution.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; Howard Scott; James Nelson; Jim Knapp; John Fritzges;  
Phil Hailes

**IP7\_028439**



**From:** Jerry Finlinson  
**To:** Sal Ferrara  
**Date:** 2/2/2004 1:56:09 PM  
**Subject:** ABT burner thermocouples and tubing welds

Sal,

Now that we have the new burners on site, we see how to install the thermocouples. The tubes are pre installed and we slide the thermocouples down the tubes. The one at the burner tip has some bends near the end. I hope that the thermocouple is able to go around those bends, otherwise it won't make it to the end of the tube.

On the pitot tube manifold, the tubing bends look nice, but they appeared to use brass T's instead of stainless T's and the welding job looks poor. See attached photo. What can you do to improve that? Leaks there will cause errors in our air flow measurement, so we need these to be good welds. It will be difficult to access inside the duct for repairs.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; James Nelson; Phil Hailes

**IP7\_028440**

**From:** Jerry Finlinson  
**To:** Sal Ferrara  
**Date:** 12/29/2003 10:48:40 AM  
**Subject:** Burner installation instrumentation details

Sal,

We are reviewing the burner installation package today and had a few questions regarding some details of the installation.

- 1) Thermocouples: How did you propose to mount the JBX's or terminations outside the windbox? How is the thermocouple fed through the windbox wall? Please provide more details.
- 2) Burner air flow tubing - Are you or air monitor providing the tubing and fittings from the burner to the IBAM panel? Do we have any details that TEI will need for the installation and mounting of the tubing on supports?
- 3) Scanners - Has ABB provided any info on connecting the cooling air to the scanner heads? Are you providing a ball valve to isolate that cooling air? Will the existing 3/4 inch conduit be OK for the scanner signal? see attached photo
- 4) Need more details on how the burner is attached to the windbox.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** arnold.j.piellucci@us.abb.com; Howard Hamilton; James Nelson;  
james.m.clark@us.abb.com; Phil Hailes

**IP7\_028441**

**From:** Jerry Finlinson  
**To:** James Clark  
**Date:** 2/7/2004 10:10:47 AM  
**Subject:** Estimated delivery of flame scanner detectors and fiber optics?

James,

We'd like to try mounting some of the flame scanner fiber optics and detectors on our burners while they are staged on the burner deck to ensure that they fit properly and to measure how far from the end of the tube the fiberoptic is located, we may also need to order additional fittings for the cooling air connection.

Would you recommend that we install the thermocouples and flame scanners on the burners prior to moving them into position or wait until after they are installed? We'd prefer to do it with them sitting on the burner deck as we have better access.

Can you give us the estimated ship date of the detectors and remainder of the equipment?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Bill Morgan; Howard Hamilton; James Nelson; Jon Christensen; Ken Nielson; Phil Hailes

IP7\_028442

**From:** Jerry Finlinson  
**To:** Howard Hamilton  
**Date:** 2/20/2004 1:33:21 PM  
**Subject:** Fwd: Re: Response from ABB Regarding Connecting Cooling Air Hose to ABB Scanners

Here's Bill Clark's latest response.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> <william.m.clark@us.abb.com> 2/20/2004 12:38:16 PM >>>

Jerry,

The 6" above furnace pressure is the standard. Your Hoffman blowers sound as if they would be adequate at 13.5". Our scanners are good up to 900 degrees F on the hot end. The air helps keep the electronics head temperate and creates a positive purge through the lens assembly to keep it clean. Restricting the input to 1.5" pipe would not cause a problem.

Bill

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on 02/20/2004 01:57 PM

02/20/2004 01:57 PM

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>, "Jim Knapp" <[JIM-KNAPP@ipsc.com](mailto:JIM-KNAPP@ipsc.com)>,  
"James Nelson" <[JIM-N@ipsc.com](mailto:JIM-N@ipsc.com)>  
Subject: Re: Response from ABB Regarding Connecting

IP7\_028443

Cooling Air Hose to ABB  
Scanners

William,  
We currently have Baily Flame On scanners with a 1.5 inch cooling air line,  
the air is coming from a Hoffman Flame Scanner Blower and 6" header.  
We'd like to adapt the 1.5 inch line to your 2" input connection. Do you think that would be sufficient.  
Do these new scanners take about the same cooling air as the Bailey Flame On system?  
We'd rather not repipe our system unless absolutely necessary.

I'm not aware of any CFM measurements, should we try and get some?

I noticed in the manual that you recommend 6" positive pressure and 30 cfm at 120F.  
Our Hoffman blowers create pressure from 0-27 inches water.  
There is an alarm if the pressure drops below 13 inches and auto starts the backup blower if the pressure drops below 12.5 inches water.  
Since our furnace runs at -.5 inches, we have a pressure drop of at least 13.5 inches probably much greater.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> <[william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)> 2/20/2004 10:38:58 AM >>>

Jerry,

We see many methods, the preference would be a flexible 2" hose for serviceability  
and to allow for boiler expansion.

I have enclosed a drawing to show a hose arrangement we have supplied historically.

Regards,

IP7\_028444

William M. Clark  
ABB Inc  
2 Waterside Crossing  
Windsor, CT 06095

Phone: (860) 285-9402  
Fax: (860) 285-6999  
Cell: (860) 559-5673  
E-Mail: [william.m.clark@us.abb.com](mailto:william.m.clark@us.abb.com)

Message from "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)> received on  
02/20/2004  
12:20 PM

02/20/2004 12:20 PM  
Internal

"Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

Sent by "Jerry Finlinson" <[Jerry-F@ipsc.com](mailto:Jerry-F@ipsc.com)>

To: "Clark Johnson" <[CLARK-J@ipsc.com](mailto:CLARK-J@ipsc.com)>, Harry  
Dohalick/USINY/ABB@ABB\_US01,  
William M. Clark/USPOA/ABB@ABB\_US01  
cc: "Howard Hamilton" <[howard-h@ipsc.com](mailto:howard-h@ipsc.com)>  
Subject: Fwd: Connecting cooling air to ABB Scanners

William,  
I have here photos of our current burners and the new ABT  
burner.  
It shows the connection for flame scanner cooling air.  
Our installers are wondering how you prefer the 2" pipe connected to  
your scanner cooling port.  
Please advise.  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Howard Hamilton 2/20/2004 8:12:44 AM >>>  
Attached photos explain request for clarification concerning how ABB  
will want seal air connected to their scanners.

TEI plans to use the existing 2" flex hose feeding the B&W scanner and

**IP7\_028445**

connect it to the new ABB scanner.

ABB needs to clarify not they will want to connect from the existing  
2"  
flex hose to the new ABB scanner.

Attention: Attachment "ABB SCANNER.jpg" has been removed from this  
note  
on February 20 2004 by William M. Clark/USPOA/ABB  
Attention: Attachment "Existing Scanner.jpg" has been removed from  
this  
note on February 20 2004 by William M. Clark/USPOA/ABB

(See attached file: C.htm)  
(See attached file: B949738-Model.pdf)

(See attached file: C.htm)

**From:** Jerry Finlinson  
**To:** Bill Morgan; Jim Knapp; Ken Nielson  
**Date:** 2/7/2004 8:59:06 AM  
**Subject:** IBAM purge air supply

Ken/Bill,

This week I walked down IBAM purge air supply with Hank Johnson and Dave Reit GSL. There is a 2 inch air supply header around the boiler on the 5th 7th and 9th LVL's. Dave proposed to use 1.5 inch copper tubing down the front side from 9th floor to pick up all 4 IBAM panels and back side up from 5th floor on 1.5 inch header. It would be more consistent to come down from the 9th floor on both front and rear to make it more consistent. Please let Dave know that.

We'll have a 1" T off the header through filters and 3/4 flex hose to IBAM panel. We thought that in the location of the IBAM panels, it's not so hot, so the 3/4 inch brake hose would make a good flex connection rather than using stainless flex, which costs much more. Dave will purchase the materials for this installation, except the filters, which Jim Knapp has ordered.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**CC:** Howard Hamilton; James Nelson; Jon Christensen; Phil Hailes

IP7\_028447



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 1/14/2004 8:54:13 AM  
**Subject:** RE: IPP Burner TC's Type E

Jerry,  
Last week I handed Phil Hailes 2 copies of Thermocouple drawing 10-4787Rev1. Let me know if you still have questions.  
Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Thursday, December 18, 2003 1:35 PM  
To: sal@advancedburner.com  
Cc: Howard Hamilton; James Nelson; Phil Hailes  
Subject: RE: IPP Burner TC's Type E

Sal,  
That sounds like a pretty good system.  
Our current ones are tack welded onto the burner, then a 1/4 inch thermocouple wire is fed back out to a small jbx. I have enclosed some photos.

Could you send me the manufacturer and part number of the ones you are planning to supply? Do you have any photos or diagrams of the mounting?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 12/18/2003 11:15:31 AM  
>>>

Jerry,  
To install the TC in the field is easy since it would be slid into the shop installed guide pipes. The end of the guide pipes are shop welded to the tip and barrel so you wouldn't have to do this in the field (field connections will required screwing into place). I will proceed with change to Type E.

I estimate the cost to add an additional thermocouple, guide pipe assembly to be \$450 per burner. The am concerned however the impact this will have on delivery if we make any changes at this point in the shop fabrication of the burner assemblies.  
Sal

IP7\_028448

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Thursday, December 18, 2003 10:50 AM  
To: sal@advancedburner.com  
Subject: RE: IPP Burner TC's Type E

We'd like to stick with type E. What is the difficulty of field mounting?  
Are the locations readily accessible? Are they tack welded onto metal?  
I was wondering how much the TC's cost. If we wanted to have a 3rd TC mounted on the backplate to allow comparison with our current burner backplate  
temps, how much would that cost us?  
Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 12/18/2003 7:39:22 AM  
>>>

Jerry,  
I stopped production on the probes until you make your decision. At this point there would not be any impact on price to make the change to Type E however delivery of TC's will be delayed until at least 1st week of February. In this case the thermocouples will need to be installed on site at IPP. Based on this, please let me know ASAP which way you want to go (TYPE E or Type K).

-----Original Message-----

From: Salvatore Ferrara [mailto:sal@advancedburner.com]  
Sent: Thursday, December 18, 2003 9:00 AM  
To: 'Jerry Finlinson'  
Cc: 'Bill Morgan'; 'Jim Knapp'; 'James Nelson'; 'Phil Hailes'  
Subject: RE: IPP Burner TC's Type E

Jerry,  
We ordered Type K thermocouples. I'll check on changing it and what the overall impact will be on price and delivery. This will definitely impact delivery date of the first burner assemblies scheduled to complete the first week of January.  
The thermocouple location in the burner front are shown on arrangement drawing 03008-100-A00-DO (Items G1 & G2). G1 measures the fuel injector tip (coal nozzle) temperature and G2 measures the fuel injector barrel temperature.  
Sal

**IP7\_028449**

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Wednesday, December 17, 2003 6:10 PM  
To: sal@advancedburner.com  
Cc: Bill Morgan; Jim Knapp; James Nelson; Phil Hailes  
Subject: IPP Burner TC's Type E

Sal,

I understand you are supplying 2 thermocouples on each new burner.  
Could you let us know where you plan to locate them?

Just so you know, we currently have type E thermocouples on our  
existing burners.

We'd appreciate it if you used the same type E, so that we wouldn't  
need to pull new extension wire back to the data acquisition IO.

Let us know if different.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

CC: "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson"  
<JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

IP7\_028450

**From:** Jerry Finlinson  
**To:** Salvatore Ferrara  
**Date:** 12/18/2003 11:35:32 AM  
**Subject:** RE: IPP Burner TC's Type E

Sal,  
That sounds like a pretty good system.  
Our current ones are tack welded onto the burner, then a 1/4 inch thermocouple wire is fed back out to a small jbx. I have enclosed some photos.

Could you send me the manufacturer and part number of the ones you are planning to supply? Do you have any photos or diagrams of the mounting?

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Salvatore Ferrara" <sal@advancedburner.com> 12/18/2003 11:15:31 AM >>>  
Jerry,

To install the TC in the field is easy since it would be slid into the shop installed guide pipes. The end of the guide pipes are shop welded to the tip and barrel so you wouldn't have to do this in the field (field connections will required screwing into place). I will proceed with change to Type E.

I estimate the cost to add an additional thermocouple, guide pipe assembly to be \$450 per burner. The am concerned however the impact this will have on delivery if we make any changes at this point in the shop fabrication of the burner assemblies.  
Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Thursday, December 18, 2003 10:50 AM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Subject: RE: IPP Burner TC's Type E

We'd like to stick with type E. What is the difficulty of field mounting?  
Are the locations readily accessible? Are they tack welded onto metal?  
I was wondering how much the TC's cost. If we wanted to have a 3rd TC mounted on the backplate to allow comparison with our current burner backplate temps, how much would that cost us?  
Thanks, Jerry

IP7\_028451

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 12/18/2003 7:39:22 AM  
>>>

Jerry,  
I stopped production on the probes until you make your decision. At this point there would not be any impact on price to make the change to Type E however delivery of TC's will be delayed until at least 1st week of February. In this case the thermocouples will need to be installed on site at IPP. Based on this, please let me know ASAP which way you want to go (TYPE E or Type K).

-----Original Message-----

From: Salvatore Ferrara [<mailto:sal@advancedburner.com>]  
Sent: Thursday, December 18, 2003 9:00 AM  
To: 'Jerry Finlinson'  
Cc: 'Bill Morgan'; 'Jim Knapp'; 'James Nelson'; 'Phil Hailes'  
Subject: RE: IPP Burner TC's Type E

Jerry,  
We ordered Type K thermocouples. I'll check on changing it and what the overall impact will be on price and delivery. This will definitely impact delivery date of the first burner assemblies scheduled to complete the first week of January. The thermocouple location in the burner front are shown on arrangement drawing 03008-100-A00-DO (Items G1 & G2). G1 measures the fuel injector tip (coal nozzle) temperature and G2 measures the fuel injector barrel temperature.  
Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Wednesday, December 17, 2003 6:10 PM  
To: [sal@advancedburner.com](mailto:sal@advancedburner.com)  
Cc: Bill Morgan; Jim Knapp; James Nelson; Phil Hailes  
Subject: IPP Burner TC's Type E

Sal,  
I understand you are supplying 2 thermocouples on each new burner. Could you let us know where you plan to locate them?  
Just so you know, we currently have type E thermocouples on our existing burners.  
We'd appreciate it if you used the same type E, so that we wouldn't need to pull new extension wire back to the data acquisition IO.  
Let us know if different.

**IP7\_028452**

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

**CC:** Howard Hamilton; James Nelson; Phil Hailes

**From:** GERALD HINTZE  
**To:** HOWARD HAMILTON  
**Date:** 2/19/2004 12:40:09 PM  
**Subject:** Requisition 200218 Has been Rejected

Line No (1) AIR TESTING OF THE FIRST 16 ABT BURNERS THAT ARRIV  
Reject Reason)

**From:** Kevin Miller  
**To:** Howard Hamilton  
**Date:** 2/11/2004 8:08:42 AM  
**Subject:** Construction Power

The power for the air compressor is done. All TEI needs to do is connect to the disconnect and turn on the switch.

The four power carts will all be energized by quitting time tonight if all go according to plan. On the south side of the boiler, the carts are on the 6th and 8th floors as requested. On the north side, they are on the 5th & 8th floors. The 6th floor on the north side is a weird floor and there really isn't a place for the cart. They will place it on the 5th floor and if the contractor wants it somewhere else, they can move it around. There is extra cable on the cart.

Thanks, Kevin



**From:** Kevin Miller  
**To:** Howard Hamilton  
**Date:** 2/11/2004 8:08:42 AM  
**Subject:** Construction Power

The power for the air compressor is done. All TEI needs to do is connect to the disconnect and turn on the switch.

The four power carts will all be energized by quitting time tonight if all go according to plan. On the south side of the boiler, the carts are on the 6th and 8th floors as requested. On the north side, they are on the 5th & 8th floors. The 6th floor on the north side is a weird floor and there really isn't a place for the cart. They will place it on the 5th floor and if the contractor wants it somewhere else, they can move it around. There is extra cable on the cart.

Thanks, Kevin

**From:** Kevin Miller  
**To:** Howard Hamilton  
**Date:** 1/6/2004 6:26:17 AM  
**Subject:** Re: Construction Power for TEI

We'll start today....Kevin

>>> Howard Hamilton 1/5/2004 5:33:07 PM >>>

1. Darrell Steede will try to get you the amperage required tomorrow (01/06/03). He will call you as soon as he knows.

2. A power cart will ne all that is required.

3. TEI's Trailer presently is only provided with 220 v / 50 amp service. The heater alone for the trailer is 40 amp. TEI needs a minimum of 100 amps for all of the office equipment they will be running. Can you get a transformer that will provide them with what they need?

>>> Kevin Miller 1/2/2004 7:37:30 AM >>>

Please supply a couple of clarifications.

1. On item 3B below. What is the amperage required to run the compressor on the ground floor. I know it is 480v but need the amperage required.

2. On item 5. Your original note asked for a power supply of 220v and 110v for your tool room on 14. We will park a power cart right near H-207 which will supply both. If my memory is correct, you didn't have any 480v power at this location last year. Is the one cart adequate. It has two 240v outlets and ten 110v outlets.

3. Please use caution. ALL DISCONNECTS currently installed are energized to the line side. Terminate the load side with caution.

Thanks, Kevin

>>> Howard Hamilton 12/31/2003 5:25:11 PM >>>

Kevin Miller and I walked down the power requested by Darrell Steede in his faxed memo of 12/23/03. The following points were make concerning this walkdown.

Reference the memo from TEI for the following itemized power:

1. OFA System:

IPSC has in place 480 volt, 3 phase, 100 amp disconnects located in the following four places.

- a. H207, 9th floor
- b. H203, 9th floor
- c. L203, 9th floor
- d. L207, 9th floor

This is what TEI had last year.

**IP7\_028457**

## 2. Burners front and rearwall.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects located in the following places by the end of next week:

- a. 8th floor, burner front wall, over by column line G204 on the east side of the boiler.
- b. 8th floor, burner rear wall, over by column line M205 located on the centerline of the boiler.

Note: Talked to Darrell Steede and he requested the above locations in my phone conversation with him on 12/31/03.

## 3. Air Heater

Kevin Miller is in the process of supplying two 480 volt, 3 phase disconnects and two power carts (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

- a. Column line Q205, elevation 4743'-11", which I believe is the 5th floor.
- b. TEI also wants a 480 volt 3 phase disconnect located on the ground floor next to column R205. TEI will be using this to power a compressor they will be using to power several air tuggers that will be using the Up and Up Air Heater Access Ways. Kevin will try to have this power in place by the end of next week.

Talked to Darrell on 12/31/03 to verify the above power requirements and locations.

## 4. Super Heater Panels:

IPSC has in place 480 volt, 3 phase 100 amp disconnects located in the following three places.

- a. H207, 14th floor
- b. L207, 14th floor
- c. H203, 13th floor

## 5. Tool room 14th floor.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects and a power cart (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

H207, 14th floor.

**From:** Kevin Miller  
**To:** Howard Hamilton; tsteede@teiservices.com  
**Date:** 1/2/2004 7:37:43 AM  
**Subject:** Re: Construction Power for TEI

Please supply a couple of clarifications.

1. On item 3B below. What is the amperage required to run the compressor on the ground floor. I know it is 480v but need the amperage required.
2. On item 5. Your original note asked for a power supply of 220v and 110v for your tool room on 14. We will park a power cart right near H-207 which will supply both. If my memory is correct, you didn't have any 480v power at this location last year. Is the one cart adequate. It has two 240v outlets and ten 110v outlets.
3. Please use caution. ALL DISCONNECTS currently installed are energized to the line side. Terminate the load side with caution.

Thanks, Kevin

>>> Howard Hamilton 12/31/2003 5:25:11 PM >>>

Kevin Miller and I walked down the power requested by Darrell Steede in his faxed memo of 12/23/03. The following points were made concerning this walkdown.

Reference the memo from TEI for the following itemized power:

1. OFA System:

IPSC has in place 480 volt, 3 phase, 100 amp disconnects located in the following four places.

- a. H207, 9th floor
- b. H203, 9th floor
- c. L203, 9th floor
- d. L207, 9th floor

This is what TEI had last year.

2. Burners front and rearwall.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects located in the following places by the end of next week:

- a. 8th floor, burner front wall, over by column line G204 on the east side of the boiler.
- b. 8th floor, burner rear wall, over by column line M205 located on the centerline of the boiler.

Note: Talked to Darrell Steede and he requested the above locations in my phone conversation with him on 12/31/03.

3. Air Heater

**IP7\_028459**

Kevin Miller is in the process of supplying two 480 volt, 3 phase disconnects and two power carts (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

a. Column line Q205, elevation 4743'-11", which I believe is the 5th floor.

b. TEI also wants a 480 volt 3 phase disconnect located on the ground floor next to column R205. TEI will be using this to power a compressor they will be using to power several air tuggers that will be using the Up and Up Air Heater Access Ways. Kevin will try to have this power in place by the end of next week.

Talked to Darrell on 12/31/03 to verify the above power requirements and locations.

#### 4. Super Heater Panels:

IPSC has in place 480 volt, 3 phase 100 amp disconnects located in the following three places.

- a. H207, 14th floor
- b. L207, 14th floor
- c. H203, 13th floor

#### 5. Tool room 14th floor.

Kevin Miller is in the process of supplying 480 volt, 3 phase, 100 amp disconnects and a power cart (110 volt single phase) to the following location. Kevin will try to have this power in place by the end of next week.

H207, 14th floor.

**CC:** Bret Kent; Dave Hahn; James Nelson; Jerry Finlinson; Phil Hailes

**From:** Phil Hailes  
**To:** Howard Hamilton  
**Date:** 6/27/2005 7:45:44 AM  
**Subject:** Fwd: Unit 2 F3 burner fire pictures

>>> Garry Christensen 6/25/2005 10:33:27 AM >>>  
Attached are the pictures of Unit 2 F3 burner line fire.

**From:** Phil Hailes  
**To:** Dennis Killian; Howard Hamilton; James Nelson; Jerry Hintze;  
PROPREPT@ipsc.com  
**Date:** 3/17/2004 6:29:42 PM  
**Subject:** Incident Report: Unit 2, West Bay Crane

Please find the attached Incident Report for the Unit 2, West Bay Crane rope failure.

Phil Hailes

**IP7\_028462**

**From:** Phil Hailes  
**To:** Mike Alley  
**Date:** 2/19/2004 3:02:11 PM  
**Subject:** Unit Turbine Crane Bay

Mike,

I've spoken with Darrell Steede of TEI. He will see that the forklifts are not parked in the Turbine crane bay on Monday. He's aware that you need access for several days. There will be no problem with him accessing the unit crane via the pulverizer bay.

Several new burners and misc equipment will remain near the crane bay, but I don't believe that they will be in your way.

Phil

**CC:** Howard Hamilton; James Nelson; Kelly Cloward; ssteede@teiservices.com;  
Will Lovell

**IP7\_028463**



**From:** Phil Hailes  
**To:** Howard Hamilton; James Nelson; joel@advancedburner.com; Salvatore Ferrara  
**Date:** 1/10/2004 1:19:31 PM  
**Subject:** ABT Burner First Shipment Delayed

Due to delays in the throat casting delivery, ABT will not be shipping a full truckload of burners until **January 23**. This will be a truck load of 4 or 5 burners.

I've asked ABT to ship a single burner, if the full shipment date slips beyond this point. The single burner would give us an opportunity to move a burner through the unit and position it. A practice run, so to speak.

ABT and the shop (PCW) is aware that we can not allow the final on-site date of Feb 23 to slip, because of outage concerns.

Because of this delay, in order to reach the final deadline, the weekly burner delivery will have to increase to about 15 burners.

Sal, will you please confirm the delivery schedule, as we discussed, for the burners and throat castings?

**IP7\_028464**

**From:** Phil Hailes  
**To:** Aaron Nissen; Craig Stumph; Garry Christensen; Howard Hamilton; James Nelson  
**Date:** 12/2/2003 7:28:51 AM  
**Subject:** ABT Burner Rotations

ABT has recommended changing our burner rotations (CW and CCW) from the present pattern of East vs West, CW vs CCW to an alternating pattern of CW and CCW acrossed individual burners. In other words, every other burner will be CW then CCW.

ABT has done this in the past and feels that it provides better mixing.

Comments?

**From:** Phil Hailes  
**To:** Aaron Nissen; Howard Hamilton; James Nelson  
**Date:** 5/3/2004 2:16:55 PM  
**Subject:** ABT Service Engineer for Testing, Set-up

Aaron,

I spoke with Sal Ferrara about having one of their engineers here the week of May, 10. ABT is heavy into many assignments at this time, so if we are going to change the requested timing, we need to give them as much notice as possible.

Please confirm the Monday, May 10, is when you would like to have their engineer on site.

I've mentioned to Sal that the engineer should be prepared to address O2, CO2 balance, and burner windbox pressures. Besides these basic items, is there any other subjects that they should be prepared to work on?

Phil

**CC:** Salvatore Ferrara

**IP7\_028466**

**From:** Phil Hailes  
**To:** Bret Kent; Howard Hamilton  
**Date:** 1/6/2004 6:02:38 PM  
**Subject:** Contract Cost Tracker W/O

Howard and Bret,

I gave the warehouse my contract cost tracker number (02-60456-54) for tracking the charges that TEI will make to the warehouse (ice, rags, nuts and bolts, etc) **that are attributable to the OFA job**. I use a specific extension to the base W/O number, so that I can follow and summarize the costs to back-charge TEI at the end of the job. By the end of the outage, these costs add up to several thousands of dollars.

Can each of you give them the appropriate W/O for burners and air heater work?

My intent is that anything TEI attempts to get from the warehouse and tool room be attributed to each individual contract by uttering the keywords of "OFA" or "Burners" or "Air Heater". This will help the warehouse people know which contract to charge, will help keep the costs straight and allow us to track what was used.

Vance and Garry,

I would also like to arrange things with the Tool Room so that one or two key TEI people (eg. Superintendents) can check out tools as needed, without us having to personally sign them out each time. Can this be worked out?

Thanks Phil

**CC:** Gary Goold; James Nelson; Vance Bishop

IP7\_028467

**From:** Bret Kent  
**To:** Boyd Cowley; Joe Duwel; Jon Finlinson; Ken Lebbon; Pam Snyder; Richard Schmit  
**Date:** 2/9/2004 8:05:35 AM  
**Subject:** Receiving Hours For TEI

By way of information.

TEI is receiving and unloading material for the Burners and Air Heaters per the following schedule:

**Monday - Saturday**  
**6:30 AM to 5:00 PM**

Someone from T.S. will be here during this schedule to authorize them onsite and inspect material as it is unloaded.

The following companies are aware of this schedule. Should a truck arrive outside of these hour, they have been instructed that they will have to wait until TEI is onsite to unload them.

**Air Heaters**

Alstom Air Preheater Company  
New Tech Transports (Or a carrier contracted to them)

**Burners**

Advanced Burner Technology  
Pacer (Or a carrier contracted to them)

**CC:** Dave Hahn; Howard Hamilton; James Nelson; Phil Hailes

**IP7\_028468**

**From:** Phil Hailes  
**To:** Bret Kent; Howard Hamilton; Richard Schmit  
**Date:** 2/9/2004 3:44:46 PM  
**Subject:** Re: contractors

TEI is planning to work 2, 12-hour shifts, 7 days a week. The schedule will be 6:30 to 6:30. This is the plan for when the outage actually begins.

At present, they are working 1, 10-hour shift, 5 days a week (occasional Saturday, as-needed). This schedule is 7:00 AM to 5:30 PM.

They will inform us (Howard, Bret, Phil) if their schedule is going to change. We'll let you know as soon as we know of any changes.

>>> Richard Schmit 2/9/2004 3:16:50 PM >>>

Hello,

For Security scheduling I need to find out what kind of schedules the contractors will be working so that the gates can be properly manned.

Thanks,

Richard F. Schmit  
IPSC Operations

**IP7\_028469**

**From:** Phil Hailes  
**To:** Howard Hamilton  
**Date:** 1/26/2004 7:15:25 AM  
**Subject:** Re: Fwd: GSL Installing Cable for Flame Scanners - IBAM

>>> James Nelson 1/23/2004 2:26:34 PM >>>  
This should be fine, Jerry. Thanks

>>> Jerry Finlinson 1/22/2004 4:31:19 PM >>>  
FYI,

Here is the labor estimate from GSL to pull the cable for scanners and IBAM panels. We may want to add for them to pull power to scanner cabs and to mount the IBAM panels, but that should be a minor effort.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> "Craig Mullen" <[cmullen@gslelectric.com](mailto:cmullen@gslelectric.com)> 1/22/2004 4:13:22 PM >>>

Jerry:

In accordance with your request, we submit the following scope of work & pricing for your review.

1. Install 16 junction boxes for the Flame Scanner equipment.
2. Install 9600 feet of Owner provided cable for the south side between the Flame Scanner junction boxes and the relay room (this wire will be installed through existing conduit, cable tray and wire ways.
3. Install 12,000 feet of Owner provided cable for the north side between the Flame Scanner junction boxes and the relay room (this wire will be installed through existing conduit, cable tray and wire ways.
4. Terminate and tag all cables in accordance with your drawings.

#### IBAM Panels

1. Install 4 cables (150 feet each) south side approximately 600 feet between the IBAM panels and the ABB remote I/O cabinet on the 5th level.
2. Install 4 cables (250 feet each) north side approximately 1000 feet between the IBAM panels and the ABB remote I/O cabinet on the 5th level.
3. GSL to provide 120 volt power to each IBAM panel.
4. This pricing does not include mounting of the IBAM panels. If you want us to take care of this work, please contact us.
5. Terminate and tag all cables in accordance with your drawings.

This price includes all labor, material and equipment required to complete this project in a timely manner.

**IP7\_028470**

TOTAL PRICE:	
Flame Scanner:	\$24,467.00
IBAM:	\$4,200.00
TOTAL PRICE:	\$28,667.00

Thank You,

Craig Mullen



**From:** Phil Hailes  
**To:** Boyd Cowley; Dale Hurd; Joe Duwel; Jon Finlinson; Ken Lebbon; Mike Alley; Richard Schmit; Stan Smith  
**Date:** 12/30/2003 4:53:39 PM  
**Subject:** TEI Contractor Arrives 01-05-04

Just a reminder that TEI will be arriving on site beginning Monday, January 5. They will be here until after the Unit 2 outage is complete.

After setting up trailers, etc, they will begin work on the structural changeouts to the unit, which is preliminary work for the OFA system. Through the month of January, air heater baskets, burners and OFA hardware will be arriving. TEI will unload and stage the hardware as needed.

The upcoming outage TEI, will be doing the OFA system, platen extensions, new burners and air heater work.

Phil

**CC:** Howard Hamilton; James Nelson

**IP7\_028472**

**From:** Phil Hailes  
**To:** Bret Kent; Howard Hamilton; James Nelson; Richard Schmit  
**Date:** 3/7/2004 6:41:14 PM  
**Subject:** TEI Schedule Change & Badge Alley

Richard,

TEI will have a portion of their crew working 10-hour shifts beginning on Monday, March 8. This will require Security to be at badge alley at 4:30 PM (Monday, March 8) and 2:30 AM (Tuesday, March 9). This will continue for an extended period of time, likely to the end of the outage.

Of course, the balance of their crew will be continuing to work the 12-hour shifts (6:30 AM/PM).

Phil

IP7\_028473

**From:** Richard Schmit  
**To:** Bruce McCann; Howard Hamilton; Kelly Cloward  
**Date:** 2/2/2004 7:49:48 AM  
**Subject:** outage-pulverizers

Kelly,  
Howard said he could get all the elbows and isolation valves off over the first weekend, then you could sign on to all the mills first thing Monday morning. Towards the end of the outage Howard will need a few days to get the isolation valves back in. will this work for you?

Bruce-note for tagging to leave the burner isolation valve tags off the clearances until the blind flanges get put on.

Richard F. Schmit  
IPSC Operations

IP7\_028474

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>, "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>  
**Date:** 2/4/2004 8:41:52 AM  
**Subject:** RE: RE: ABT burner pitot photos - AMC WO NO 50633

Jerry,  
The tube joints are joined by silver brazing since the soldering process has too low of a temperature rating for our purpose. Andy Chew has it backwards in his response to you. Silver soldering is rated for a working temperature in the 400 to 500°F range. Silver brazing is typically rated upwards of 1100°F working temperature range. Concerning the appearance of the brazed joints, PCW did not clean all the joints in which case you see some of the flux material used in the brazing process. PCW has assured us that the joints are good and will not leak.

Let me know if you have other questions.

Regards,

Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Tuesday, February 03, 2004 8:17 PM  
To: Howard Hamilton; James Nelson; Phil Hailes  
Cc: sal@advancedburner.com  
Subject: Fwd: RE: ABT burner pitot photos - AMC WO NO 50633

FYI,

Here's Air Monitor's response to the photos of the IBAM manifold welding.

Hopefully, they did use silver solder, not brazing.

Sal, please advise.

Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Andy Chew <achew@airmonitor.com> 2/3/2004 4:34:23 PM >>>  
Jerry,

Air Monitor agreed to ABT's suggestion of using a sealing method other than

Heliarc welding. Originally they mentioned brazing but we insisted on silver solder because the temperature rating of the silver solder joint is

much higher than that of brazing. You should ask ABT about this but it appears they did not clean the solder joints. They may be good joints and

just not look very pretty. You want to make sure they are pressure

IP7\_028475

tested  
before going into service. When we modified the probes we only added additional Total pressure sensor holes to the production manifolds. Additional Static pressure sensor holes were determined to be not necessary as they did not improve the performance accuracy of the device. We will be providing an as built drawing which will include the pressure sensor details. Again, I am expecting to have the final burner test report anytime now and I will forward to you then.

Regards,

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
Tel.: 707-521-1709  
Fax: 707-526-2825  
Email: [achew@airmonitor.com](mailto:achew@airmonitor.com)

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Tuesday, February 03, 2004 2:31 PM  
To: Andy Chew; Matt Maragos  
Cc: [khpquip@earthlink.net](mailto:khpquip@earthlink.net)  
Subject: Fwd: ABT burner pitot photos

I'm sending this again, since our email was down yesterday.  
We do know that

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Jerry Finlinson 2/2/2004 2:14:00 PM >>>

FYI,

We have received our first burner from ABT.  
The Air Monitor pitot manifolds look nice, except for the welds.  
The T's are stainless, it seems preferable to have a nice weld rather than the brazing.  
I'm not sure it's what you had in mind. Take a look at the enclosed photos.

I'd like to know how you modified the pitots inside. I can see the additional holes you drilled in front of the high pressure tube, but I can't see any additional holes on the side of the other tube. How many holes is it supposed to have?

**IP7\_028476**

Are they drilled in the backside? Please provide us a drawing of the as built tubes in case we ever need to order another.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/12/2004 8:38:32 AM  
**Subject:** FW: Brazing Procedure

Howard,

Click on the web site below for the brazing procedure PCW used.

Sal

-----Original Message-----

From: Tom Smith [mailto:tomsmith@pcwfab.com]  
Sent: Thursday, February 12, 2004 10:02 AM  
To: Sal Ferrara  
Subject: Brazing Procedure

Sal, Here's the link for J.W. Harris' web page on brazing procedure.  
We used these same guidelines in the brazing of the "IBAM" tubing and fittings. Please let us know if there's anything else you need.

Tom Smith (PCW)

<http://www.jwharris.com/jwref/procs/>

IP7\_028478

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/6/2004 10:06:05 AM  
**Subject:** RE: Gouge in Tubing to Pitot Tube

Howard,

We advised the shop to take better care and make sure the remaining burners are checked to insure there aren't any more gouges in tubes. Heli-arc is how we would recommend fixing the gouge. You shouldn't even need a nitrogen purge with an experienced welder.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, February 04, 2004 2:45 PM  
To: sal@advancedburner.com  
Cc: Jerry Finlinson; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Gouge in Tubing to Pitot Tube

1/2" 316L stainless steel tubing to Pitot tube has a gouge that was done during fabrication. The gouge appears to have been made with a grinder.

The gouge is deep and appears to be through the tube wall.

TEI advises that they can run a nitrogen purge through the tubing and heli-arc the gouge.

Please review and advise.

**IP7\_028479**



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "'Howard Hamilton'" <howard-h@ipsc.com>  
**Date:** 2/9/2004 8:22:38 AM  
**Subject:** RE: Leaking Pitot Tube Fittings

Howard,  
We're checking on the weld procedure and I'll get back to you on that.  
The shop will pressure test the remaining burners prior to shipping to  
insure you'll find no more leaks in the field.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Friday, February 06, 2004 5:05 PM  
To: sal@advancedburner.com  
Cc: Jerry Finlinson; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Leaking Pitot Tube Fittings

All 16 ABT Burners received to date have been air tested. Of the 16  
burners tested only 4 did not leak. There was a total of 31 leaking  
connections found which is a failure rate of 8.9%

The attached Excel sheet calls out the location of each leading  
connection. Note that 6:00, 11:00 and 2:00 refer to the location of the  
Pitot tube connections standing outside of the front plate and looking  
down toward the throat of the burner.

Please review and advise.

IPSC requests that all leaks be repaired by Heli-Arc. IPSC is working  
with TIE to come up with a final procedure, but tentatively it would  
read as follows:

1. Heat all fittings that have leaked until the silver brazing is soft  
enough to remove the fitting that has been leaking from the tube it is  
attached to. For a cross this would mean 4 connections would have to be  
addressed.
2. Clean all of the silver braising material from the fitting and tube  
and reinstall.
3. Run a nitrogen purge through the tubing while Heli-Arcing the  
fitting to the tubing with 316E filler rod.
4. Perform an air test to verify the integrity of the welding.

The tubing is .5" OD, .162" wall and 316L stainless steel. The fittings  
are 316 stainless steel.

**CC:** "'Jerry Finlinson'" <Jerry-F@ipsc.com>, "'James Nelson'" <JIM-N@ipsc.com>,  
"'Phil Hailes'" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028480**

Here's the 2<sup>nd</sup> email with rest of the drawings.  
Sal

-----Original Message-----

**From:** Salvatore Ferrara [mailto:sal@advancedburner.com]  
**Sent:** Tuesday, January 20, 2004 4:17 PM  
**To:** Phil Hailes  
**Cc:** James Nelson; Howard Hamilton (howard-h@ipsc.com)  
**Subject:** IPSC Contract 04-45606

Phil,  
See attached document transmittal and associated drawings created in either Solidworks or AutoCad. Howard Hamilton advised that he downloaded the free solidworks "E-Drawing viewer" so that you can open the .edrw drawings and print them. I am also mailing you 3 sets.

I'm sending this in 2 emails.  
Regards,  
Sal

IP7\_028481

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Phil Hailes" <Phil-H@ipsc.com>  
**Date:** 1/20/2004 2:29:09 PM  
**Subject:** FW: IPSC Contract 04-45606

Here's the 2nd email with rest of the drawings.

Sal

-----Original Message-----

From: Salvatore Ferrara [mailto:sal@advancedburner.com]  
Sent: Tuesday, January 20, 2004 4:17 PM  
To: Phil Hailes  
Cc: James Nelson; Howard Hamilton (howard-h@ipsc.com)  
Subject: IPSC Contract 04-45606

Phil,

See attached document transmittal and associated drawings created in either Solidworks or AutoCad. Howard Hamilton advised that he downloaded the free solidworks "E-Drawing viewer" so that you can open the .edrw drawings and print them. I am also mailing you 3 sets.

I'm sending this in 2 emails.

Regards,

Sal

**CC:** "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>

**IP7\_028482**

**ADVANCED BURNER TECHNOLOGIES**

271 Route 202/206

P.O. Box 410

Pluckemin, New Jersey 07978

Phone: 908-470-0470; FAX: 908-470-0479

**DRAWING TRANSMITTAL****CONTRACT 04-45606****Burner Arrangement & Field Assembly****January 20, 2004****To:** Phil Hailes**FROM:** Sal Ferrara

<b>CODE</b>	<b>DRAWING NUMBER</b>	<b>REV</b>	<b>DRAWING TITLE</b>
2 5	03008-100-A01-FW	1	IGS UNIT 2, GENERAL ARGM'T, FRONT WALL
2 5	03008-100-A01-RW	1	IGS UNIT 2, GENERAL ARGM'T, REAR WALL
2 5	03008-100-A00-D0	3	IGS UNIT 2, GENERAL ARGM'T
2 5	03008-100-A02-D0	-	IGS UNIT 2, FIELD ASSEMBLY
2 5	03008-500-A02-D0	-	HORIZONTAL FUEL DISTRIBUTOR ASSEMBLY
2 5	03008-500-A03-D0	-	EXISTING ELL MODS INSTALLATION OF VFD

**NOTE:** Enclosed for your information and use during field installation are the listed burner drawings.

Please advise should you have any questions on these drawings.

Note that the General Arrangement drawings were revised to incorporate IPSC comments received based on previous issues.

**CODE**

- 1 FOR REVIEW
- 2 FOR ISSUE
- 3 FOR INFORMATION
- 4 FOR COMMENT
- 5 FOR MANUFACTURE
- 6 OTHER

D:\IGS03\IGS03-04 Unit 2 Burners(03-96033-00)\email and Faxes\Sal Farrara\Buner Drawings  
01-21-04\IPSC 1-20-04.doc

**IP7\_028483**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Phil Hailes" <Phil-H@ipsc.com>  
**Date:** 1/20/2004 2:25:26 PM  
**Subject:** IPSC Contract 04-45606

Phil,

See attached document transmittal and associated drawings created in either Solidworks or AutoCad. Howard Hamilton advised that he downloaded the free solidworks "E-Drawing viewer" so that you can open the .edrw drawings and print them. I am also mailing you 3 sets.

I'm sending this in 2 emails.

Regards,

Sal

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Howard Hamilton" <howard-h@ipsc.com>

**IP7\_028484**

**From:** Jerry Finlinson  
**To:** Sal Ferrara  
**Date:** 6/30/2005 4:08:25 PM  
**Subject:** Unit 2 ABT burner fire Elbow photos

Sal,

Thanks for the feedback. Today our mechanics removed the burner elbow from the F3 burner. I have included some photos of the elbow. It shows one side of the fuel distributor to be melted off. We'll pull another one of an see if it also shows some damage.

We had set our burner thermocouples to alarm at 1350 on the nozzle tip. Four of them are going high for a few minutes several times per day, so we are going to raise them to 1500F. We are trying to determine if it is some electrical noise or a real temperature increase. So far it seems to be real. We'll let you know if we find anything definitive.

It appears that the secondary air register assembly inside the burner is also melted on the bottom, so we'll likely require an entire new burner. Phil and Dean will work out the details with you.

Thermowell issues. At the very beginning, you designed two thermowells into the burner at our request. It was a 3/8 inch tube with a 1/4 inch thermocouple. However, your manufacturing made the thermowells with two 45 degree bends in each one as per the drawing. It was impossible to insert the 1/4 inch thermocouples around those bends. So we worked with Tarkel to order 1/16 inch diameter thermocouples. They are still difficult to insert, partly because they bend easily and are hard to push. So we are proposing to install a new straighter thermowell in to the nozzle tip. We need your assistance to determine the best routing for the thermowell, so that we can insert it without any bends.

On the coal pipe body readings some of our thermocouples have read low by 100 to 200 degF. We are theorizing that maybe the thermocouple is not bottomed in the thermowell, but are not sure.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> "Sal Ferrara" <sal@advancedburner.com> 6/30/2005 12:18:54 PM >>>

Jerry,

Based on the pictures the fire seems to have started either in the coal pipe or at the burner inlet. Where the coal pipe penetrates the floor grating, in

IP7\_028485

vicinity of the burner shutoff valve, seems to have been subject to overheating in addition to the fire damage to the back of the fuel injector.

At this point the items we would recommend investigating is the primary airflow and burner shutoff damper position history prior to and around the time either the tip or body thermocouple temperatures rose above the normal operating temperatures. We know from our testing experience in Spring 2004 that the plant experienced problems with burner shutoff valves randomly going closed while the burner was in service (this is potential for causing fire in coal pipe or fuel injector). Also see if any abnormal PA flow of shutoff damper conditions could be correlated with temperature excursions on other burners (Dean Wood mentioned in phone discussion that there are some other burners that experience repeatable high temperatures excursions @ once or twice per day).

Also at first available outage, the plant should remove an elbow on one, or several, burners that experience periodic temperature excursions to inspect ABT's elbow fuel distributor, fuel injector barrel and burner shutoff valve for signs of overheating. I do not know how your temperature alarm is configured however it would be best if triggered by a rate of temperature change, rather than a specific temperature limit. If a rate of change logic is not utilized for the alarm, then we would recommend setting the alarm point @ 100 degree F above the temperature measured during normal operation.

We are working on providing a price for complete burner replacement. If the secondary air register assembly is OK you may only need to replace the fuel injector assembly, although you most likely need an outage to pull the fuel injector and inspect the burner to determine this.

You also mentioned the thermowell and making the thermocouple reading more reliable. I am not sure what this means, since I am not aware that there has been a temperature measurement reliability issue on either the fuel injector tip or body readings. Please provide more detail on this.

Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Monday, June 27, 2005 2:03 PM

To: [joel@advancedburner.com](mailto:joel@advancedburner.com); [sal@advancedburner.com](mailto:sal@advancedburner.com); [tarkel@advancedburner.com](mailto:tarkel@advancedburner.com)

Cc: [nelsonj@compassminerals.com](mailto:nelsonj@compassminerals.com); Dean Wood; Howard Hamilton; Jon Christensen; Phil Hailes

Subject: unit 2 ABT burner fire photos

Joel and Sal,

This past weekend, 25 June 2005, we had a burner fire one of the new unit 2 ABT burners F3.

It happened during the time that we were starting up unit 1, so the unit 2 operator was over at the unit 1 control board and didn't notice

the alarm from the thermocouples that we had installed in the burner.

Both the coal pipe

and nozzle tip thermocouple went above 1600F.

As you can see from the attached photos, damage was extensive. The inner coal pipe has melted out the bottom and there is a slag pile inside the burner. The nozzle appears OK. The burner elbow heated up cherry red and flaked off the paint. The thermocouples and temperature switch were melted. A hole is burned through the back of the burner, so we can look right through the windbox wall into the back of the burner.

We'd like you to work with us to determine the cause of the burner fire and any possible preventive measures. Also what will be required to get it repaired. Do we need to replace the burner completely, or could it be repaired in position.

Let's also address the issue with the thermowell and how to make the thermocouple readings more reliable.

I recall you saying that there had never been a burner fire in this burner design.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

---

This message scanned for viruses by CoreComm

**CC:** Bill Morgan; Dean Wood; Howard Hamilton; Joel Vatsky; Jon Christensen; Ken Nielson; [nelsonj@compassminerals.com](mailto:nelsonj@compassminerals.com); Phil Hailes; Tarkel Larson

**IP7\_028487**



**From:** "Sal Ferrara" <sal@advancedburner.com>  
**To:** "Jerry Finlinson" <Jerry-F@ipsc.com>  
**Date:** 6/30/2005 12:24:34 PM  
**Subject:** RE: unit 2 ABT burner fire photos

Jerry,

Based on the pictures the fire seems to have started either in the coal pipe or at the burner inlet. Where the coal pipe penetrates the floor grating, in vicinity of the burner shutoff valve, seems to have been subject to overheating in addition to the fire damage to the back of the fuel injector.

At this point the items we would recommend investigating is the primary airflow and burner shutoff damper position history prior to and around the time either the tip or body thermocouple temperatures rose above the normal operating temperatures. We know from our testing experience in Spring 2004 that the plant experienced problems with burner shutoff valves randomly going closed while the burner was in service (this is potential for causing fire in coal pipe or fuel injector). Also see if any abnormal PA flow of shutoff damper conditions could be correlated with temperature excursions on other burners (Dean Wood mentioned in phone discussion that there are some other burners that experience repeatable high temperatures excursions @ once or twice per day).

Also at first available outage, the plant should remove an elbow on one, or several, burners that experience periodic temperature excursions to inspect ABT's elbow fuel distributor, fuel injector barrel and burner shutoff valve for signs of overheating. I do not know how your temperature alarm is configured however it would be best if triggered by a rate of temperature change, rather than a specific temperature limit. If a rate of change logic is not utilized for the alarm, then we would recommend setting the alarm point @ 100 degree F above the temperature measured during normal operation.

We are working on providing a price for complete burner replacement. If the secondary air register assembly is OK you may only need to replace the fuel injector assembly, although you most likely need an outage to pull the fuel injector and inspect the burner to determine this.

You also mentioned the thermowell and making the thermocouple reading more reliable. I am not sure what this means, since I am not aware that there has been a temperature measurement reliability issue on either the fuel injector tip or body readings. Please provide more detail on this.

Sal

-----Original Message-----

From: Jerry Finlinson [mailto:Jerry-F@ipsc.com]  
Sent: Monday, June 27, 2005 2:03 PM  
To: joel@advancedburner.com; sal@advancedburner.com;  
tarkel@advancedburner.com  
Cc: nelsonj@compassminerals.com; Dean Wood; Howard Hamilton; Jon Christensen; Phil Hailes  
Subject: unit 2 ABT burner fire photos

Joel and Sal,

IP7\_028488

This past weekend, 25 June 2005, we had a burner fire one of the new unit 2 ABT burners F3.  
It happened during the time that we were starting up unit 1, so the unit 2 operator was over at the unit 1 control board and didn't notice the alarm from the thermocouples that we had installed in the burner. Both the coal pipe and nozzle tip thermocouple went above 1600F.

As you can see from the attached photos, damage was extensive. The inner coal pipe has melted out the bottom and there is a slag pile inside the burner. The nozzle appears OK. The burner elbow heated up cherry red and flaked off the paint. The thermocouples and temperature switch were melted. A hole is burned through the back of the burner, so we can look right through the windbox wall into the back of the burner.

We'd like you to work with us to determine the cause of the burner fire and any possible preventive measures. Also what will be required to get it repaired. Do we need to replace the burner completely, or could it be repaired in position.

Let's also address the issue with the thermowell and how to make the thermocouple readings more reliable.

I recall you saying that there had never been a burner fire in this burner design.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

---

This message scanned for viruses by CoreComm

CC: "Joel Vatsky" <joel@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>, "Jon Christensen" <JON-C@ipsc.com>, "Howard Hamilton" <howard-h@ipsc.com>, "Dean Wood" <Dean-W@ipsc.com>, <nelsonj@compassminerals.com>

**IP7\_028489**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "'Howard Hamilton'" <howard-h@ipsc.com>, "'Phil Hailes'" <Phil-H@ipsc.com>  
**Date:** 12/23/2003 8:08:05 AM  
**Subject:** RE: 12-18-03 Telecon with Sal Farrara of ABT

Phil, or Howard,

Please let me know how you want the burners marked. There are only two different burner configurations (CW and CCW). To make it easier for the installation crew, Howard suggested that we just mark the burner front plate with "CW" and "CCW". However for your control system you may want to mark the burner numbers on the front plate as well according to information previously provided by Jerry Finlinson as follows:

**FRONT SIDE = SOUTH**

GROUP A				GROUP B			LVL
E1	E2	E3	E4	E5	E6	8	
A1	A2	A3	A4	A5	A6	7	
F1	F2	F3	F4	F5	F6	6	
B1	B2	B3	B4	B5	B6	5	

**BACK SIDE = NORTH**

GROUP A				GROUP B			LVL
D1	D2	D3	D4	D5	D6	8	
H1	H2	H3	H4	H5	H6	7	
F1	F2	F3	F4	F5	F6	6	
G1	G2	G3	G4	G5	G6	5	

Do you want us to put the burner numbers on in the shop, or will you do this in the field later? Please advise.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Monday, December 22, 2003 3:36 PM  
To: Phil Hailes  
Cc: sal@advancedburner.com; Jerry Finlinson; James Nelson; tsteed@teiservices.com  
Subject: 12-18-03 Telecon with Sal Farrara of ABT

Called Sal on Thursday 12/18/03 and discussed the following:

1. Overall dimensions for the burners:

a. The overall shipping length of the burners will be 13'-6-1/2".

Note: This is from the front end of the burner to the end of the bracket support for the damper drive.

b. The overall width of the burner proper is 6'-6-3/8".

Note: This is the diameter of the back plate.

c. The overall shipping width of the burners will be 7'-10-3/4".

Note: This is the front support bracket for the burner. ABT will tack weld this to the chevron supports that weld to the burner proper. The bracket is used to stabilize the burner during shipping. It can be easily removed as it is only tack welded if required to assist in the rigging of the burner.

Note: because the dimension of the burners are large I called Tinker Steed at TEI and requested to know if he had considered rigging of such a large burner. Tinker advised that he had walked down a route and went over same with Phil Hailes. Tinker is confident that the burners to the rear wall can be rigged into position. Tinker feels that a fair amount of preparation will be required including rigging and steel removal and alterations.

I will get with Phil next week and walk down the proposed TEI route with him to get a better feel for the access path to the rear wall burners.

2. I asked Sal how many types of burners there would be.

a. Sal advised that there are two types of burners supplied for our project clockwise (CW) and counterclockwise (CCW).

b. Each Burner would be marked CW or CCW and would be required to fit into a position called out as CW or CCW on the ABT arrangement drawings.

c. I asked if the burners would each have their own specific identification number placed on the burners. Sal advised that he did not know for sure but that CW and CCW would probably be the only identification required to properly install the burners. Sal will get back to Howard if ABT will be providing separate marks or identification numbers for the burners.

Sal will provide clarification for identification numbers the week of 12/22/03.

3. I asked Sal how CW and CCW were determined.

a. Sal stated the direction of the spin of the fuel and air of the burner as seen from standing directly behind the back plate of the burner and looking toward the boiler interior was how CW and CCW were determined.

b. This would apply to both the front wall burners and the rear wall burners.

4. I asked Sal about ABT Support for this project.

a. A construction adviser is generally provided. He comes out just prior to demolition and works with setting the new burners. He is required for as long as it takes to work out any of the problems that

may arise and the customer is satisfied with the burner placement.

b. A start-up adviser is brought on site just prior to bringing the unit back on line.

c. The Construction Adviser and the Start-up Adviser can be the same person or they can be two different people.

d. Sal advises that ABT has not decided who will be assigned these positions

Note: James Nelson advises that an ABT technician will be on site with the start of the outage (2/28/03) and will be on site thru completion of the start-up.

5. I asked Sal if it was possible to lift the burners up on there end if required to rigg into position.

a. Sal advised that two lugs could be welded almost anyplace on the 3/4" mild steel back plate to lift the burners.

b. Sal would advise against placing lugs on the front of the burners do to the potential damage to all of the items sticking out from the front plate (damper drives, spin vale controls, igniter sleeve etc.).

CC: "Jerry Finlinson" <Jerry-F@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, <tsteed@teiservices.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Phil Hailes" <Phil-H@ipsc.com>  
**Date:** 1/23/2004 8:24:22 AM  
**Subject:** FW: Photos - PCW

Phil,  
The first shipment of 4 burners left NJ yesterday @ 3:30 PM. See attached pictures of loading & handling.  
Sal

-----Original Message-----

From: Alex [mailto:alex@pcwfab.com]  
Sent: Friday, January 23, 2004 8:30 AM  
To: Ron Jones; Sal Ferrara; Chuck Onaitis  
Subject: Photos - PCW

Gentlemen,

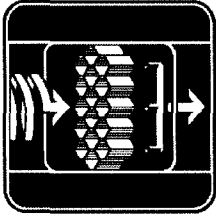
Please find attached photos for your edification.

Regards,

Alex Mankiewicz

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Howard Hamilton" <howard-h@ipsc.com>

**IP7\_028493**



# AIR MONITOR CORPORATION

Corporate Offices  
P.O. Box 6358  
Santa Rosa, CA 95406  
Tel: (707) 544-2706  
Fax: (707) 526-2825

February 3, 2004

Mr. Sal Ferrara  
Advanced Burner Technologies  
PO Box 410  
Plukenmin, NJ 07978

RE: Intermountain IBAM Project  
PO: A03-008-413  
WO: 50633

SUBJ: Burner Testing

Mr. Ferrara:

As part of its scope of supply to Advanced Burner Technologies (ABT) on this project, Air Monitor (AMC) was to perform both CFD modeling of the installed IBAMs and detailed probe characterization in its airflow test duct.

In order to facilitate the manufacturing schedule for the burners, the CFD modeling was utilized to validate the location selected by ABT for mounting the IBAMs. Of most importance to AMC was examining the proposed location to determine whether the IBAMs would be subjected to reversing or stagnated airflow. A twelve point modeling matrix is shown in CFD Modeling Matrix. As a result of the initial round of CFD modeling, the IBAM location was moved a couple of inches further away from the inlet perforated plate, sections of the divider between the burner's inner and outer passages were removed by ABT, and a pair of CFD models was re-run to verify the results of the burner modifications. Examples of the initial and final CFD modeling are attached. Based upon the final CFD results, AMC elected to increase the number of sensing holes near the mounting end of the IBAMs.

In preparation for airflow testing, AMC constructed a full-scale functional replica of the ABT burner and mounted three IBAMs in accordance with the CFD testing. Test Matrix\_R0 was developed, consisting of three outer damper positions, two inner damper positions, three swirl angles and three airflow rates. The low, mid, and high airflow rates of 9663, 13,805, and 22,087 acfm in the wind tunnel produce the same Reynolds numbers as the design minimum, normal, and maximum flow rates. See Reynolds Number Calculations worksheet.

The results of performing airflow testing per Matrix\_R0 are shown in Test Results\_R0, clearly showing that the airflow in this burner is dominated by, and a function of the position of the outer damper. After applying a single point best-fit K-factor of 0.4452 to all the data, the outer damper flow measurements in the 4.8 position were 19.92% to 32.55% higher than the test duct (Nozzle Flow), while the outer damper in the 16 position produced results 29.705% to 37.10% lower than the test duct.

Based upon the Test Results R0, AMC elected to expand the original 54 point test matrix to a 135 matrix, adding a third inner damper position (3" open) and two additional outer damper positions (8" and 12" open). The result is the Wind Tunnel Test Matrix\_R1.

**IP7\_028494**

The additional 81 flow tests were performed, resulting in the Test Results\_R1, further confirming the dependency relationship between the outer damper position and the IBAM airflow signal. Using all 135 points of data, a third order polynomial was developed, and specific K-factors for each of the five outer damper positions were calculated. These are shown in the column labeled Curve Fit K-Factor. The result of implementing a curve fit K-factor reduced the +32.55% to -37.10% variance from Test Results\_R0 to +8.57% to -8.63% in Test Results\_R1.

Further reductions in the range of measurement variance required dividing the 135 points of data into nine groups of fifteen points, each group representing a single combination of inner damper and swirl vane positions, five outer damper positions and three flow rates. A third order polynomial curve fit K-factor was determined for each of the nine groups, reducing the variance to +6.86% to -6.56%. A secondary best-fit K-factor was determined for each group of 15 points, further reducing the overall variance to +3.51% to -3.83%.

Shown below, for Test Results R0 – R2, are all formulas for converting the IBAM differential pressure signal to airflow in lbs./hr.

R0. Single point, best-fit K-factor for 54 points

$$Q_{acfm} = 9128.483276 \times \sqrt{\frac{DP \times Ta}{Pa}}$$

**Where,**

DP = Differential Pressure produced by IBAM in Inches of W.C.

Pa = Actual absolute duct pressure in Inches of Mercury (Hg)

Ta = Actual absolute air temperature (460+ duct temp in °F)

$$Lb / hr = 79.54675312 \times Q_{acfm} \times \frac{Pa}{Ta}$$

R1. 3<sup>rd</sup> order best-fit polynomial K-factor for 135 points, based upon outer damper position

$$Q_{acfm} = 20504.23018 \times K \times \sqrt{\frac{DP \times Ta}{Pa}}$$

**Where,**

DP = Differential Pressure produced by IBAM in Inches of W.C.

Pa = Actual absolute duct pressure in Inches of Mercury (Hg).

Ta = Actual absolute air temperature (460+ duct temp in °F)

K = Probe Coefficient derived from the following equation

$$K = -0.0005066375P^3 + 0.0149206078P^2 - 1.1016842562P + 0.5514334077$$

Where P = Outer Damper position in inches "Open".

$$Lb / hr = 79.54675312 \times Q_{acfm} \times \frac{Pa}{Ta}$$



R2. Nine, 3<sup>rd</sup> order best-fit polynomial primary K-factors based upon outer damper position, combined with corresponding best-fit line secondary K-factors

a. Inner @ 1", Vanes @ 30°

**Primary Correction:**  $Q1_{acfm} = 20504.23018 \times K1 \sqrt{\frac{DP \times Ta}{Pa}}$   
**Where,**

DP = Differential Pressure Produced by IBAM in Inches of W.C.  
Pa = Actual absolute duct pressure in Inches of Mercury (Hg).  
Ta = Actual absolute air temperature (460+ duct temp in °F)  
K1 = Probe Coefficient derived from the following equation.

$$K1 = -0.0005160698P^3 + 0.0151109169P^2 - 0.1021109736P + 0.5479363073$$

**Where** P = Outer Damper position in inches "Open".

**Second Correction:**  $Q2_{acfm} = 0.93213 \times Q1_{acfm} + 938.61252$

**Where,**

Q2<sub>acfm</sub> is the final corrected flow in acfm

$$Lb/hr = 79.54675312 \times Q2_{acfm} \times \frac{Pa}{Ta}$$

b. Inner @ 3", Vanes @ 30°

$$K1 = -0.0005668957P^3 + 0.0170757815P^2 - 0.1238078901P + 0.6258513938$$

**Second Correction:**  $Q2_{acfm} = 0.93369 \times Q1_{acfm} + 917.90133$

c. Inner @ 5", Vanes @ 30°

$$K1 = -0.0005744093P^3 + 0.0174543625P^2 - 0.1287841730P + 0.6484898817$$

**Second Correction:**  $Q2_{acfm} = 0.92983 \times Q1_{acfm} + 966.24889$

d. Inner @ 1", Vanes @ 45°

$$K1 = -0.0004485864P^3 + 0.0128252354P^2 - 0.0793247289P + 0.4738300277$$

**Second Correction:**  $Q2_{acfm} = 0.92780 \times Q1_{acfm} + 998.99211$

e. Inner @ 3", Vanes @ 45°

$$K1 = -0.0005125018P^3 + 0.0151754738P^2 - 0.1049700879P + 0.5616551006$$

**Second Correction:**  $Q2_{acfm} = 0.3599 \times Q1_{acfm} + 885.07490$

f. Inner @ 5", Vanes @ 45°

$$K1 = -0.0005314237P^3 + 0.0157184118P^2 - 0.1088960787P + 0.5723255306$$
$$\text{Second Correction: } Q2_{acfm} = 0.92779 \times Q1_{acfm} + 996.21098$$

g. Inner @ 1", Vanes @ 60°

$$K1 = -0.0004109098P^3 + 0.0116702447P^2 - 0.0696424993P + 0.4477972024$$
$$\text{Second Correction: } Q2_{acfm} = 0.92787 \times Q1_{acfm} + 998.71141$$

h. Inner @ 3", Vanes @ 60°

$$K1 = -0.0005153999P^3 + 0.0151221072P^2 - 0.1038177221P + 0.5568244679$$
$$\text{Second Correction: } Q2_{acfm} = 0.92290 \times Q1_{acfm} + 1065.29025$$

i. Inner @ 5", Vanes @ 60°

$$K1 = -0.0004835412P^3 + 0.0141329363P^2 - 0.0938041524P + 0.5281907566$$
$$\text{Second Correction: } Q2_{acfm} = 0.92236 \times Q1_{acfm} + 1071.22493$$

In conclusion, this report demonstrates the benefits of using both CFD modeling and actual airflow testing. CFD modeling proved beneficial in determining the IBAM location and pointing out beneficial burner modification; but if used alone, there would have been no way to quantify the unique relationship between flow probe and actual burner airflow at various combination of burner adjustment. The result would have been measurement errors as great as  $\pm 37\%$ .

Sincerely,

AIR MONITOR CORPORATION

Paresh Davé  
Manager, Applications Engineering

cc: Mr. Jerry Finlinson  
Intermountain Generating Power

**From:** Jerry Finlinson  
**To:** Bill Morgan; Howard Hamilton; Ken Nielson; Phil Hailes  
**Date:** 2/15/2004 10:05:23 AM  
**Subject:** Fwd: CFD Modeling and Wind Tunnel Test Reports For The  
ABT/Intermountain Burner Airflow Measurement Proje

Here are the CFD test reports from Air Monitor.  
I think it contains the conversion equations for the IBAM flow pitots.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Andy Chew <achew@airmonitor.com> 2/9/2004 1:27:52 PM >>>  
ABT PO A03-008-413  
AMC WO NO 50633

Gentlemen,

Attached are three documents that constitute Air Monitor's CFD modeling and burner testing reports for the ABT/Intermountain Burner Airflow Measurement Project. The Word file is the report, which makes reference to the Excel file for the burner testing and the .JPG files for the CFD modeling. Please contact me to schedule a convenient time for a conference call later this week to review the content of the report. Also, please let me know if you would like me to send a hard copy and/or a CD of the documents. Thank you again for your patience in awaiting this material.

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
Tel.: 707-521-1709  
Fax: 707-526-2825  
<<mailto:achew@airmonitor.com>>

**CC:** Aaron Nissen; Garry Christensen; James Nelson; Jon Christensen

**IP7\_028498**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/20/2004 8:53:19 AM  
**Subject:** RE: Donut for Lighters

Howard,  
We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, February 18, 2004 11:39 AM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**CC:** <tarkel@advancedburner.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

IP7\_028499

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "James Nelson" <JIM-N@ipsc.com>, "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/20/2004 12:01:40 PM  
**Subject:** RE: Donut for Lighters

James,

Your right, we should have told you what we were doing due to lack of information. We were on such a fast track to meet the delivery requirements, we missed communicating this to you.

The only other penetration through the burner front plate is the scanner hole. We provided a 3" NPT pipe nipple which is the requirement ABB gave us for connecting their scanner assembly. Please let me know if something is missing from ABB's supplied equipment.

Sal

-----Original Message-----

From: James Nelson [mailto:JIM-N@ipsc.com]  
Sent: Friday, February 20, 2004 12:17 PM  
To: sal@advancedburner.com; Howard Hamilton  
Cc: tarkel@advancedburner.com; Phil Hailes; ssteede@teiservices.com  
Subject: RE: Donut for Lighters

This may explain the ignitor hole size but why are the other penetrations so large? Also in the future we need to know the impact of any information you lack. We will always try our best respond if we understand the impact and the time frame.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/20/2004 8:49:15 AM  
>>>

Howard,

We requested early on in the project for information on the igniter OD (my 9/30/04 letter). Since we did not receive the information we made the hole larger than we thought the igniter could be so that all that would have to be done in the field was to install ring as you suggest. ABT should not have to supply the rings.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, February 18, 2004 11:39 AM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Donut for Lighters

Please advise if ABT provides a donut to close the gap between the CFA Lighter and the front plate of the ABT burners.

Attached photos show a gap between the CFA Lighters and the hole provided to accept the lighter in the front plate of the ABT Burner.

The OD of the Outer Sleeve of the B&W lighter is 4.5" the diameter of

IP7\_028500

the hole in the ABT Burner is 6".

IPSC has a couple of outer lighter sleeves in inventory and placed them in the burner to get an idea of fit.

Note: Donut shown in photos was made up and placed to show what we think should have been provided by ABT.

**CC:** <tarkel@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**From:** James Nelson  
**To:** Howard Hamilton; Phil Hailes  
**Date:** 8/20/2004 3:07:48 PM  
**Subject:** Fwd: IPSC Contract 04-45606 Status

Sal just sent this fyi.

>>> "Sal Ferrara" <sal@advancedburner.com> 8/20/2004 12:35:35 PM >>>  
James,  
Attached is ABT letter concerning the status of the contract, retention, and  
also our report summarizing testing performed in May.  
Joel Vatsky and I would like to plan a trip the end of this month to meet  
with you at the plant as you suggested. We would travel on Tuesday August  
31st , meet with you on Wednesday Sept. 1st, , then travel home on Thursday  
Sept. 2nd.  
Please confirm whether or not this works with your schedule.  
Sal

**IP7\_028502**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/13/2004 8:22:50 AM  
**Subject:** Request of Services & Insurance

Howard,  
We will provide a new certificate upon renewal of our insurance in April.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Thursday, February 12, 2004 3:52 PM  
To: tarkel@advancedburner.com  
Cc: sal@advancedburner.com; James Nelson; Phil Hailes; Sylvan Lovell; ssteede@teiservices.com  
Subject: Request of Services

Request that you be on site Thursday morning, February 26th, 2004.

TEI is looking to start installing ABT Burners on Tuesday, March 2.

TEI will be working 24 hours a day 7 days a week, two 12 hour shifts 6:30 AM to 6:30 PM, beginning Friday night, February 27th.

Insurance: I checked with Jan Finlinson our risk manager and was advised that ABT is good on their insurance until the middle of April.

Note: You may want to look at extending this coverage.

Drug Policy: Because you are a Service Representative by yourself and not using tools IPSC is willing to wave on ABT having a drug policy.

Safety Orientation: When you arrive on Thursday morning, February 26th you will be taken to our Safety Department. You will be given IPSC's General Safety Review, confined space class and tagging class. Respirator training will be required if you will be wearing a respirator mask.

You will need to be signed on several clearance once Unit 2 is down. TEI be holding the group sheets for these clearances.

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, "Sylvan Lovell" <SYLVAN-L@ipsc.com>, <ssteede@teiservices.com>, "Tarkel Larson" <tarkel@advancedburner.com>

**IP7\_028503**



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/11/2004 11:06:14 AM  
**Subject:** RE: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Howard,  
See my responses below.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, February 10, 2004 4:10 PM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: RE: Questions and requests Concerning Vertical FuelDistributor(VFD)

1. Is the holder made out of hi carbon or low carbon steel. This will have and effect on the welding procedure.  
Response: A36, medium carbon.

2. Drawing 3008-500-A00-0 was help. Could you send 3008-500-A01-0, 3008-500-A00-D01, 3008-500-A00-D02  
Response: These are shop fabrication details that we don't supply to customers. However attached is the -A01 drawing you asked for that gives the steel shell dimensions that should help you.

3. When we last talk back in mid January the VFD and HFD were scheduled to be on site 2/23/04. You were going to see if this schedule could be improved. What is that latest ETA for the VFD , HFD and related hardware.  
Response: Materials and fabrication is on going - kits, cement, VFD, HFD look to be on schedule for delivery on 2/23 but I don't expect they'll to be on site any sooner.

4. The ceramic block is note below as 1" thick and 9" long. How wide is it?  
Response: The tiles have a major width of 2.578" (this with is the back of the tile and sets against the ID of the coal elbow). The tiles have a side angle of 6 deg 26 minutes- this provides the key-arch.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/10/2004 9:18:15 AM  
>>>

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Monday, January 26, 2004 2:11 PM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Questions and requests Concerning Vertical Fuel Distributor(VFD)

IP7\_028504

Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:See attached drawing.

2. What material is the VFD made of?

Response:Silicon Carbide Block with Carbon steel holder on outside.

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:see previous answer

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:This is installation contractors responsibility.

5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response:Enough ceramic material needs to be removed to fit the insert.

We don't have detail dimensions of existing ceramic liners.

What is the size and shape of the ceramic to be placed back?

Response:1" thick, standard 9" long ceramic tile with 6 degree angle bevel for self supporting key arch attachment.

Are there just two new pieces of ceramic that fit back into the piped segments and around the VFT?

Response:Pieces will need to be cut to fit depending on size tile liners removed. We will supply you with four 10" continuous rim diamond impregnated masonry blades for cutting the replacement ceramic tiles.

Are there a bunch of small pieces like floor tiles that need to be placed back?

Response:See response on size above.

Does the ceramic liner kit have an instruction sheet that you can email or fax?

Response:I will obtain instruction sheet and forward it to you.

Has ABT used these kits on past projects?

Response:Yes.

Does ABT know how many man-hours have been expended to install the kits we have been supplied?

Response:No, this has always been performed by a sub-supplier at a fixed price.

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as bedding and grout". Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response:I will obtain MSDS sheet and forward to you. Note that any RTV required should be supplied by the installation contractor.

What is the differentiation between grout and bedding?

Response: Bedding is set that the tile sits in. Grout is applied in tile seams. This application does not require grout.

CC: "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/10/2004 12:18:42 PM  
**Subject:** RE: Rolled Hoop Replacement

Howard,

We are supplying L2"x3"x1/4" rolled angles so you will be gaining 1/4" of adjustment. You won't need the new angles until you are installing the burners however you can cut the tacks on the rolled hoop Item 10 in the meantime and discard it. The new rolled angles will be shipping with the last truck load (maybe some partials earlier.

We are revising the installation notes on the field assembly drawing to account for this change. Attached is a WORD file with the revised notes as they will appear on the drawing.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, February 10, 2004 10:50 AM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Rolled Hoop Replacement

ABT is proposing to replace the rolled hoop item 10 on ABT drawing 03008-100-A02-D2 with a rolled L2"x2"x1/4. The existing hoop is 2 3/4" wide 1/4" rolled plate. This would mean that we will be losing 3/4" of adjustment in the horizontal direction. Would it not be better to roll

.

Please advise.

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>, "Chuck Onaitis" <chuck@advancedburner.com>

IP7\_028507

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/9/2004 1:19:39 PM  
**Subject:** FW: Questions Concerning Removal and Installation Note 16

Howard,  
On Burner insertion we can accept 1/4" in or out without a problem.  
Beyond that each case will have to be reviewed by ABT.  
Sal

> -----Original Message-----

> From: Howard Hamilton [mailto:howard-h@ipsc.com]

> Sent: Wednesday, January 28, 2004 1:42 PM

> To: sal@advancedburner.com

> Cc: Jerry Finlinson; James Nelson; Phil Hailes;  
ssteede@teiservices.com

> Subject: Questions Concerning Removal and Installation Note 16

>

> Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary,  
> reposition the burner to fit up with the fuel line?"

>

> 1. Removal and installation note 10 calls for the distance from  
> centerline of furnace wall to end of fuel distributor tip to be  
> 18-5/8". Should the burner have to be moved in or out along its  
> longitudinal axis this dimension will have to be changed.

>

> How far can we reduce this dimension by moving the burner toward the  
> boiler?

>

> Response:

>

> How far can we increase this dimension by moving the burner away from  
> the boiler?

>

> Response:

>

> 2. The ring support ( item number 10) has not been welded out to the  
> windbox prior to note 16 (see note 17) but has been welded out to the  
> burner front plate see note 12 and 13. This will prevent the burner  
from

> being moved in toward the boiler. It would appear that ABT does not  
want

> to reduce the 18-5/8" dimension noted above.

>

> Should fit up require that the burner be moved toward the boiler how  
is

> this to be accomplished?

>

> Response:

>

> 3. Note 17 on ABT Drawing 03008-100-A02-D0 states, "Finish welding  
> burner front and support ring". This is a repeat of the weld called  
out

> in note 13 which states, "Finish welding burner front plate in place".

>

> Should this note read, "Finish welding burner support ring to boiler windbox"?

>

> Response:

>

> Did ABT intend to weld the burner support ring to the boiler wind box in note 13 and the burner front plate to the burner support ring in note 17?

>

> If this is the case the burner would not be prevented from being moved in toward the boiler by the burner support ring.

>

> Response.

>

> 4. If item 11 is welded to the burner throat the burner cannot be moved toward the boiler for any adjustments.

>

> Should fit up require that the burner be moved toward the boiler how is this to be accomplished?

>

> Response:

>

> 5. The welding of item 11 to the boiler casing (3/16" fillet 1" on 18") is not called out in the removal and installation notes.

>

> When does TEI recommend that this weld be made?

>

> Response.

>

> 6. Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary, reposition the burner to fit up with the fuel line?"

>

> I have addressed concerns for moving the burner to or away from the boiler above.

>

> Concerns about moving the burner up and down and side to side are addressee here.

>

> If the burner has to be moved up or down or side to side this will change the centering of the burner called out in note 10 which states "Center burner in wall opening and level and plumb burner.

>

> What field reference does ABT expect to be used to determine if the burner is centered to the wall opening?

>

> Response:

>

> How far off from this field reference can we be if we have to move the burner to make the fuel connection.

>  
> Note 10 requires the burner to be level and plumb?  
>  
> If adjustment have to be made to make up to the fuel line, will the  
> burner have to remain level and plumb or can is be tilted a little to  
> accomplish this fit up?  
>  
> Response.  
>  
> If it can be tilted by how much and what is the point of reference?  
>  
> Response.  
>  
> Any of the welds called out for item 11 and the welds called out for  
> item 10 as shown in Detail C will not allow up, down or side to side  
> adjustments to be made if required to make the fuel connection.  
>  
> It would appear that only tack welds should be made until after the  
> burner has been make up to the fuel connection.  
>  
> Would ABT have a problem of only making tack welds until after the  
fuel  
> connection has been made?  
>  
> Response.  
>  
> The removal and installation note 21 states "Make all oil and steam  
> connections."  
>  
> This should read "Make all oil and air connections."  
>  
> Response:  
>  
>

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/9/2004 11:20:11 AM  
**Subject:** FW: Questions and requests Concerning the removal and installation of the existing B&W Oil Igniter

Howard,  
See our responses added below.  
Sal

> -----Original Message-----  
> From: Howard Hamilton [mailto:howard-h@ipsc.com]  
> Sent: Monday, January 26, 2004 4:24 PM  
> To: sal@advancedburner.com  
> Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
> Subject: Questions and requests Concerning the removal and  
> installation of the existing B&W Oil Igniter  
>  
> Reference Drawing 03008-100-A02-D0 entitled, "Field Assembly":  
>  
> 1. Removal and installation note on drawing 03008-100-A02-D0 states,  
> "Install Oil Lighter per this drawing and B&W Drawing 29435E."  
>  
> I have been able to locate B&W Drawing 294359E that is a sectional  
> assembly drawing for the existing Mark V B&W Burners.  
>  
> I assume that ABT meant to reference drawing 294359 in note 19, is  
this  
> correct?  
>

> Response:  
> We meant to reference B&W Drawing 294359E.

> 2. Section A-A on Drawing 03008-100-A02-D0 calls out a 3/16" fillet  
> seal weld for attaching the old B&W igniter to the new ABT Burner  
Front  
> Plate.  
>  
> What is the front plate of the new ABT Burner made out of?  
>

> Response: A36 carbon Steel  
>  
> What is the P number and ASME material designation for the ABT front  
> plate?  
>  
> Response: ABT does not use pressure part specifications for  
non-pressure  
parts. All of our welds are carbon steel to carbon steel unless noted



otherwise.

- >
- > The lighter sleeve that is shown welded to the ABT front plate is made of carbon steel.
- >
- > What type of welding rod is required and is preheat or post heat needed for this weld?
- >
- > Response: Welding procedures are to be provided by the welding contractor, not the equipment supplier.
- >

- > 2. B&W drawing 294359E calls for the CFA lighter to be horizontal where
- > ABT Drawing 03008-100-A02-D0 calls for the CFA lighter to be at an angle.
- >
- > What is the horizontal angle of the B&W CFA lighter in the new ABT Burner?
- >
- > Response: This is not a replacement in kind burner. The igniter is to be installed in the indicated position on the burner. The burner components are designed to set the proper angle of the igniter.

- >
- > 3. B&W drawing 294359E calls for the face of the CFA lighter shield to be located back from the centerline of the boiler wall 5 1/4". ABT Drawing 03008-100-A02-D0 does not call out this end limiting dimension.
- >
- > Where does ABT want to locate the face of the CFA lighter shield with respect to the centerline of the boiler wall?
- >
- > Response: Use the B&W dimension.

- >
- > 4. B&W drawing 294359E calls for a distance from the centerline of the burner to the centerline of the lighter to be 16-15/16" at both the front and rear ends of the lighter, which also tells one that the lighter is horizontal. ABT Drawing 03008-100-A02-D0 does not call out a

> distance from centerline dimension for either the front or rear of the  
> lighter.  
>  
> What dimension from centerline does ABT want to locate the CFA lighter  
> both front and rear end of same?  
>  
> Response: See above.

>  
> 5. Does ABT require any field alteration to the burners, such as  
> trimming vanes?  
>  
> Response: No.  
>  
>  
>  
>

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/9/2004 11:09:57 AM  
**Subject:** FW: Questions Concerning Item 10 on Drawing 03008-100-A02-D0

Howard,  
See our responses added below.  
Sal

> -----Original Message-----

> From: Howard Hamilton [mailto:howard-h@ipsc.com]  
> Sent: Monday, January 26, 2004 6:23 PM  
> To: sal@advancedburner.com  
> Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
> Subject: Questions Concerning Item 10 on Drawing 03008-100-A02-D0

>

> 1. B&W drawing 294359E calls for the hole in the windbox to accommodate

> the burners to have a diameter of 78 1/4". ABT Drawing 03008-100-A02-D0

> calls out item 10 to be a carbon steel (A36) bar hoop 78 1/4" ID, 2 3/4"

> wide and 1/4" thick. This means that the only overlay onto the windbox

> that ABT is depending on is the 1/4" thickness of the hoop (OD 78 3/4").

>

> This appears to be a very close shave considering if the burner has to be moved up down or side ways more than 1/4" the hoop and the hole will

> have a gap that will need to be addressed.

>

> My Question is what happens if a sizable gap (say 1/2") is unavoidable between hoop and windbox?

>

> Response: You are correct. We will supply rings rolled from 2 x 2 x 1/4"

> angles to replace the hoop.

>

> 2. In Detail C on Drawing 03008-100-A02-D0 ABT has shown that a 3/16"

> fillet seal weld is required between Item 10 and the windbox. Since both

> material are A36 we can figure a required welding procedure.

>

> In Detail C on Drawing 03008-100-A02-D0 ABT has shown a 3/16" fillet

> seal weld between item 10 and the ABT burner front plate. The drawing

> calls out item 10 to be A36, but the front plate is not addressed.

>

> What is the front plate made out of?

>

> Response: A36

>  
> What is the P-number and ASME designation for the burner front plate.  
>  
> Response: ABT does not use pressure part specifications for  
> non-pressure parts. All of our welds are carbon steel to carbon steel  
unless noted otherwise.  
>  
>  
> What welding rod does ABT recommend and is preheat or post heat  
> required?  
> Response: Welding procedures are to be provided by the welding  
> contractor, not the equipment supplier.

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/9/2004 11:13:42 AM  
**Subject:** FW: Questions concerning item 11 on drawing 03008-100-A02-D0

Howard,  
See our answers below.  
Sal

> -----Original Message-----

> From: Howard Hamilton [mailto:howard-h@ipsc.com]  
> Sent: Tuesday, January 27, 2004 1:09 PM  
> To: sal@advancedburner.com  
> Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
> Subject: Questions concerning item 11 on drawing 03008-100-A02-D0

>  
> 1. Item 11 on drawing 03008-100-A02-D0 is made out of A36 steel. This  
> same casing ring on B&W's existing burner is made out of stainless  
steel  
> TP 304.

>  
> Why can ABT use mild steel ?

>  
> Response. We have used C.S. in all of our instalations and have no  
reported  
problems.

>  
> 2. Attached photo shows that there is a sizeable gap between Item 11  
> and the burner throat. B&W placed Kaowool rope packing to seal this  
gap  
> in the existing burners.

>  
> Does ABT require that this gap be sealed and if not, why and if so  
with  
> what?

>  
> Response: Please remember this is not a replacement in kind. Our  
burner is  
different from the OEM in many ways, both in improved performance and  
durability.

The gap is deliberates and supplies a stream of air that will keep the  
throat cool during out of service conditions.>

> 3. Item 11 is called out as "shipped with unit" in its description on  
> drawing 03008-100-A02-D0. This would indicate that it is shipped  
loosed  
> or only tack welded to the burner as item 10 is called out to be in  
> removal and installation note 8.

>  
> Is Item 11 unattached to the burner throat during operation allowing  
> the burner to expand and contract without restriction?

>  
> Response:  
>  
> Is Item 11 welded to the burner throat or just tack welded?  
>  
> Response:  
>  
> If Item 11 is only tack welded to the burner throat do these tacks  
need  
> to be broken to allow burner movement?  
>  
> Response:  
  
>  
> 4. Item 11 is not called out in the Removal and Installation Notes.  
>  
> Does ABT have a recommended sequence for the welding of Item 11.  
>  
> Response:Item 11 is tacked to the burner throat for shipment.  
the tacks should be cut before instalation of the burner, to allow free  
motion between the burner and the throat.

A note will be added to the drawing specifying this, as well as the  
welding  
of the ring to the exosting wallbox.

>  
> 5. In B&W drawing 294359E the throat sleeve casing (Item e) is shown  
> welded to the casing weld ring which is welded to the boiler wall  
> tubes.  
>  
> Is item 11 welded to the throat sleeve casing (Item e) or the casing  
> weld ring?  
>  
> Response:> Does ABT require that the throat sleeve casing (Item e) be  
cut  
flush  
> with the casing weld ring so that item 11 can be welded to the casing  
> weld ring?  
>  
> Response:The casing ring(B&W item E), should be removed so that our  
ring  
can weld to the casing weld ring.  
We will add this to the installation notes.  
>  
>  
>

CC: "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/9/2004 11:17:27 AM  
**Subject:** FW: Questions Concerning Removal and Installation Note 16

Howard,  
See our answers added below. Some of these questions were asked previously and answered in which case I skipped on the responses to those.  
Sal

> -----Original Message-----

> From: Howard Hamilton [mailto:howard-h@ipsc.com]

> Sent: Wednesday, January 28, 2004 1:42 PM

> To: sal@advancedburner.com

> Cc: Jerry Finlinson; James Nelson; Phil Hailes;  
ssteede@teiservices.com

> Subject: Questions Concerning Removal and Installation Note 16

>

> Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary,  
> reposition the burner to fit up with the fuel line?

>

> 1. Removal and installation note 10 calls for the distance from  
> centerline of furnace wall to end of fuel distributor tip to be  
> 18-5/8". Should the burner have to be moved in or out along its  
> longitudinal axis this dimension will have to be changed.

>

> How far can we reduce this dimension by moving the burner toward the  
> boiler?

>

> Response:

>

> How far can we increase this dimension by moving the burner away from  
> the boiler?

>

> Response:

>

> 2. The ring support ( item number 10) has not been welded out to the  
> windbox prior to note 16 (see note 17) but has been welded out to the  
> burner front plate see note 12 and 13. This will prevent the burner  
from  
> being moved in toward the boiler. It would appear that ABT does not  
want  
> to reduce the 18-5/8" dimension noted above.

>

> Should fit up require that the burner be moved toward the boiler how  
is  
> this to be accomplished?

>

> Response:

>

> 3. Note 17 on ABT Drawing 03008-100-A02-D0 states, "Finish welding

> burner front and support ring". This is a repeat of the weld called  
out  
> in note 13 which states, "Finish welding burner front plate in place".  
>  
> Should this note read, "Finish welding burner support ring to boiler  
> windbox"?  
>  
> Response:  
>  
> Did ABT intend to weld the burner support ring to the boiler wind box  
> in note 13 and the burner front plate to the burner support ring in  
note  
> 17?  
>  
> If this is the case the burner would not be prevented from being moved  
> in toward the boiler by the burner support ring.  
>  
> Response. The welding sequence will be rewritten to call for tack welds  
prior to installation of the elbow.  
completing the welding will be one of the last items.

>  
> 4. If item 11 is welded to the burner throat the burner cannot be  
moved  
> toward the boiler for any adjustments.  
>  
> Should fit up require that the burner be moved toward the boiler how  
is  
> this to be accomplished?  
>  
> Response: Rigging is by the installation contractor, not by ABT.

>  
> 5. The welding of item 11 to the boiler casing (3/16" fillet 1" on  
18")  
> is not called out in the removal and installation notes.  
>  
> When does TEI recommend that this weld be made?  
>  
> Response. These items were asked in a previous e-mail. See it for a  
response.

>  
> 6. Note 16 on ABT Drawing 03008-100-A02-D0 states, "If necessary,  
> reposition the burner to fit up with the fuel line?"  
>  
> I have addressed concerns for moving the burner to or away from the  
> boiler above.  
>



> Concerns about moving the burner up and down and side to side are  
> addressee here.  
>  
> If the burner has to be moved up or down or side to side this will  
> change the centering of the burner called out in note 10 which states  
> "Center burner in wall opening and level and plumb burner.  
>  
> What field reference does ABT expect to be used to determine if the  
> burner is centered to the wall opening?  
>  
> Response: An equal space between the tubes forming the opening and  
the  
outside of the throat.

>  
> How far off from this field reference can we be if we have to move the  
> burner to make the fuel connection.  
>  
> Note 10 requires the burner to be level and plumb?  
>  
> If adjustment have to be made to make up to the fuel line, will the  
> burner have to remain level and plumb or can it be tilted a little to  
> accomplish this fit up?  
>  
> Response. If everything was built to print, and not distorted during  
operation, the ability to move the burner would not be required.  
We added this so that the fit between the burner and the existing  
coal pipe  
could be accomplished with a minimum of field effort.  
I apologize for the inconsistent sequence of welding, but the intent  
should  
have been quite clear. The burner can be shifted to some degree to  
accommodate the existing pipe location.

If conditions are close to the drawing information provided to us, this  
discussion is moot. If they are not then we will address the problems  
when  
we have been provided enough information to make a decision.

>  
> If it can be tilted by how much and what is the point of reference?  
>  
> Response.  
>  
> Any of the welds called out for item 11 and the welds called out for  
> item 10 as shown in Detail C will not allow up, down or side to side  
> adjustments to be made if required to make the fuel connection.  
>  
> It would appear that only tack welds should be made until after the  
> burner has been made up to the fuel connection.  
>  
> Would ABT have a problem of only making tack welds until after the  
fuel

> connection has been made?  
>  
> Response.  
>  
> The removal and installation note 21 states "Make all oil and steam  
> connections."  
>  
> This should read "Make all oil and air connections."  
>  
> Response: We will correct this. the information supplied was not clear  
on  
the atmozing fluid.  
>  
>

**CC:** "Jerry Finlinson" <Jerry-F@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>,  
"Phil Hailes" <Phil-H@ipsc.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/9/2004 4:07:17 PM  
**Subject:** FW: Questions Concerning The Horizontal Fuel Distributor (HFD)

Howard,  
See our answers below.  
Sal

> -----Original Message-----

> From: Howard Hamilton [mailto:howard-h@ipsc.com]  
> Sent: Monday, January 26, 2004 5:37 PM  
> To: sal@advancedburner.com  
> Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
> Subject: Questions Concerning The Horizontal Fuel Distributor (HFD)

>  
> Reference Drawing 03008-500-A02-D0 entitled, "Horizontal Fuel  
> Distributor Assembly."

>  
> 1. Drawing 03008-500-A02-D0 appears to show that the HFD simply fits  
> inside the coal elbow.

>  
> Will alterations need to be made to the ceramic in the coal elbow to  
> accommodate the HFD or has enough tolerance been allowed to avoid  
having  
> to alter the existing ceramic in the coal elbow?

>  
> Response:No

>  
> 2. Items 2 and 3 in drawing 03008-500-A02-D0 are called out to be made  
> of Alumina.

>  
> What is Alumina is it a ceramic or some type of metal?

>  
> Response:Alumina is a ceramic.

>  
> 3. Is Alumina fragile and will special precautions need to be taken  
to  
> keep from chipping or breadding it?

>  
> Response: Handle it carefully. It is not as fragile as glass, but any  
sharp  
impact can damage it.

>  
> 4. Should the Alumina of any of the 48 HFD's be chipped, cracked or  
> broken can they be repaired in the field.

>  
> Response: If this happens contact us with specifics.

>

> 5. What type of repair will need to be made to restore a piece of  
> alumna that been chipped, cracked or broken?

>  
> Response:See above

>  
> 6. Will the bolts, nuts, washers and gaskets called out in drawing  
> 03008-100-A02-D0 be sent with the HFD or sent out separately?

>  
> Response:Any item, not noted as "by other" or reuse is supplied by  
ABT.

>

> 7. If the items listed in "6" are sent separately how will they be  
> shipped, when will they be shipped and to whom are they being shipped.

>  
> Response:They will be shipped from PCW and package identified per the  
drawing.

>  
>  
>

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

## REMOVAL AND INSTALLATION NOTES:

THE FOLLOWING INSTRUCTIONS ARE SUGGESTIONS. THE SEQUENCE MAY BE MODIFIED TO ACCOMMODATE WORK FLOW, EQUIPMENT AVAILABLE, AND SKILL LEVELS OF THE WORKMEN.

UNLESS NOTED OTHERWISE ALL WELDS ARE CARBON STEEL TO CARBON STEEL.

1. REMOVE ELBOW
2. INSTALL VFD ITEM 3 (VERTICAL FUEL DISTRIBUTOR) PER DRAWING 03008-500-A03-0 IN EXISTING ELBOW
3. DISCONNECT SEAL AIR PIPING, OIL, AIR LINES AND ALL ELECTRICAL LEADS
4. REMOVE EXISTING SCANNERS, DISCARD.
5. REMOVE EXISTING OIL IGNITER AND SET ASIDE FOR REUSE
6. REMOVE INSULATION AND LAGGING AROUND EXISTING BURNER FRONT PLATE
7. REMOVE EXISTING BURNER AND DISCARD
8. REFERENCE B&W DRAWING 294359E. REMOVE ITEM e AND GRIND WELDS FLUSH TO THE EXISTING CASING WELD RING.
9. BREAK TACK WELDS OF SUPPORT RING, ITEM 10 AND SEAL RING ITEM 11
10. DISCARD ITEM 10 (ROLLED RING) AND REPLACE WITH NEW ANGLE RING SHIPPED SEPERATLY.
11. INSTALL NEW BURNER. SEE DRAWING 03008-100-A01-FW AND 03008-100-A01-RW FOR BURNER LOCATION AND SPIN. ITEM 11 SHOULD BE KEPT IN POSITION ON THE TIP.
12. CENTER BURNER IN FURNACE WALL OPENING AND LEVEL AND PLUMB BURNER. LOCATE TIP PER SIDE VIEW.
13. INSTALL BURNER CROSSOVER SUPPORT ITEM 9 (03008-100-A03-D07) AND SUPPORT END GUIDE ITEM 15 (03008-100-A03-D08), CENTER ITEM 15 ON ITEM 9 TUBING, WELD AS SHOWN IN SECTION D-D. SHIM TO FIT TO EXISTING SUPPORT RAILS. COMPLETE WELDING PER SECTION D-D.
14. LOCATE SUPPORT RING, ITEM 10, AGAINST WINDBOX WALL. TACK WELD TO WINDBOX AND BURNER FRONT PLATE
15. CENTER ITEM 11 ON THE TIP, AND TACK IN PLACE TO THE EXISTING CASING WELD RING
15. INSTALL COAL ELBOW & HORIZONTAL FUEL DISTRIBUTOR ASSEMBLY PER DETAIL B.
16. THE BURNER CAN BE MOVED UP TO 1/4" IN ANY DIRECTION TO FIT UP WITH THE EXISTING COAL PIPE ATTACHMENT.
17. FINISH WELDING FRONT PLATE AND SUPPORT RING IN PLACE SEE DETAIL "C".
18. FINISH WELDING BURNER FRONT AND SUPPORT RING PER DETAIL C
19. INSTALL FLAME SCANNER PER ABB DRAWING:  
902-2491-AA  
STNRD-B232666-107  
STNRD-D232665-025

STNRD-D232677-002

STNRD-00-D623232-000-001

20. INSTALL OIL IGNITER PER THIS DRAWING AND B&W DRAWING 294359E
21. INSTALL T/C LEADS PER MANUFACTURERS INSTRUCTIONS.
22. MAKE ALL OIL AND AIR CONNECTIONS.
23. MAKE ALL ELECTRICAL CONNECTIONS FOR THERMOCOUPLES, AND MAIN FLAME SCANNER.
24. INSULATE AND LAG BURNER FRONT
25. STROKE ALL OPERATORS TO MAKE SURE THAT THEY FULLY OPEN AND CLOSE WITH NO BINDING.
- 26 AFTER DRAFT FANS HAVE BEEN STARTED CAREFULLY TIGHTEN ALL PACKING GLANDS TO STOP ANY LEAKS AROUND SHAFTS (DO NOT OVER TIGHTEN). RECHECK ALL OPERATORS FOR MOVEMENT.

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 2/10/2004 9:23:06 AM  
**Subject:** RE: Questions and requests Concerning Vertical Fuel Distributor(VFD)

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Monday, January 26, 2004 2:11 PM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Questions and requests Concerning Vertical Fuel Distributor(VFD)

Reference Drawing 03008-500-A03-D0 entitled, "Installation of VFD":

1. To get a better feel for the dimension of the VFD would you email a copy of the drawing for piece 03008-500-A00-0 called out on 03008-A03-D0.

Response:See attached drawing.

2. What material is the VFD made of?

Response:Silicon Carbide Block with Carbon steel holder on outside.

3. What is the P-number and ASME designation for the material the VFD is made out of?

Response:see previous answer

4. The coal piping elbow is made of carbon steel (P1). Drawing 03008-500-A03-D0 calls for a 3/16" fillet 1" on 4" stitch weld on all sides of the VFT.

What is the type of welding rod required and is post or preheat required?

Response:This is installation contractors responsibility.

5. Drawing 03008-500-A03-D0 states, "Remove existing ceramic lining in these areas only and replace with new ceramic liner kits supplied by ABT."

Does the ceramic from the entire first and second inlet segments of the miter elbow need to be removed?

Response:Enough ceramic material needs to be removed to fit the insert. We don't have detail dimensions of existing ceramic liners.

What is the size and shape of the ceramic to be placed back?

Response: 1" thick, standard 9" long ceramic tile with 6 degree angle bevel for self supporting key arch attachment.

Are there just two new pieces of ceramic that fit back into the piped segments and around the VFT?

Response: Pieces will need to be cut to fit depending on size tile liners removed. We will supply you with four 10" continuous rim diamond impregnated masonry blades for cutting the replacement ceramic tiles.

Are there a bunch of small pieces like floor tiles that need to be placed back?

Response: See response on size above.

Does the ceramic liner kit have an instruction sheet that you can email or fax?

Response: I will obtain instruction sheet and forward it to you.

Has ABT used these kits on past projects?

Response: Yes.

Does ABT know how many man-hours have been expended to install the kits we have been supplied?

Response: No, this has always been performed by a sub-supplier at a fixed price.

5. Drawing 03008-500-A03-D0 states, "Use high temperature cement as bedding and grout". Supplied by ABT"

Would ABT email or fax an MSDS for this high temperature cement?

Response: I will obtain MSDS sheet and forward to you. Note that any RTV required should be supplied by the installation contractor.

What is the differentiation between grout and bedding?

Response: Bedding is set that the tile sits in. Grout is applied in tile seams. This application does not require grout.

CC: "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Phil Hailes" <Phil-H@ipsc.com>  
**Date:** 2/18/2004 3:33:27 PM  
**Subject:** IPSC Contract 04-45606

Phil,

See attached document transmittal and associated revised drawings. I am also sending the hard copies by mail.

Sal

**CC:** "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>

**IP7\_028528**

# ADVANCED BURNER TECHNOLOGIES

271 Route 202/206  
P.O. Box 410  
Pluckemin, New Jersey 07978  
Phone: 908-470-0470; FAX: 908-470-0479

## DRAWING TRANSMITTAL

**CONTRACT 04-45606**

**Burner Field Assembly**

**February 18, 2004**

**To:** Phil Hailes  
**FROM:** Sal Ferrara

CODE	DRAWING NUMBER	REV	DRAWING TITLE
2 5	03008-100-A02-D0	2	IGS UNIT 2, FIELD ASSEMBLY
2 5	03008-100-A03-D08	1	AIR REG. CROSS-OVER SUPPORT END GUIDE
2 5	03008-100-A03-D17	-	MOUNTING SPACER ANGLE
2 5	03008-500-A02-D0	1	HORIZONTAL FUEL DISTRIBUTOR ASSEMBLY

**NOTE:** Enclosed for your information and use during field installation are 3 sets of the listed burner drawings. Revisions were made to reflect the assemblies as they are shipping. The Mounting Angle (Item 16) is shipped loose and is required for replacement of the rolled ring (Item 10) ring that was shipped tacked to the burner front plate. The drawing installation instructions were revised to reflect this change.

Please advise should you have any questions on these drawings.

### CODE

- 1 FOR REVIEW
- 2 FOR ISSUE
- 3 FOR INFORMATION
- 4 FOR COMMENT
- 5 FOR MANUFACTURE
- 6 OTHER

D:\IGS03\IGS03-04 Unit 2 Burners(03-96033-00)\email and Faxes\Sal Farrara\Revised Drawings  
02-18-04\IPSC 2-18-04.doc

**IP7\_028529**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 2/17/2004 12:02:36 PM  
**Subject:** RE: ABT Burner Shipping Status

Howard,  
We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, February 17, 2004 12:27 PM  
To: Pam Snyder  
Cc: sal@advancedburner.com; tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com  
Subject: ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**CC:** <tarkel@advancedburner.com>, <truckdispatch@aol.com>, "James Nelson" <JIM-N@ipsc.com>, <ssteede@teiservices.com>

IP7\_028530

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/19/2004 12:43:25 PM  
**Subject:** Contract 04-45606, Additional Perf Plate

Howard,

Confirming our telephone discussion earlier today, the perforated plate is coming on 2 shipments and will be delivered tomorrow (Saturday) via Conway:

Tracking No. 552452040, 23 sheets, 4' x 10', 48% perforated plate

Tracking No. 692951394, 8 sheets, 4' x 10', 40% perforated plate and 10 sheets, 4' x 10' 60% perforated plate

Conway phone no. 1-800-782-4874.

Sal

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

**IP7\_028531**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 4/13/2004 8:29:00 AM  
**Subject:** FW: Contract 04-45606, Additional Perf Plate

-----Original Message-----

From: Salvatore Ferrara [mailto:sal@advancedburner.com]  
Sent: Friday, March 19, 2004 2:39 PM  
To: Howard Hamilton (howard-h@ipsc.com)  
Cc: James Nelson; Phil Hailes  
Subject: Contract 04-45606, Additional Perf Plate

Howard,

Confirming our telephone discussion earlier today, the perforated plate is coming on 2 shipments and will be delivered tomorrow (Saturday) via Conway:

Tracking No. 552452040, 23 sheets, 4' x 10', 48% perforated plate

Tracking No. 692951394, 8 sheets, 4' x 10', 40% perforated plate and 10 sheets, 4' x 10' 60% perforated plate

Conway phone no. 1-800-782-4874.

Sal

IP7\_028532

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 2/18/2004 2:16:41 PM  
**Subject:** RE: ABT Burner Shipping Status

Howard,  
The VFD's and ceramic kits will complete by this Friday and we will ship them then, as not to impact your planned installation at the first of the outage. I'll provide you with the truck information at time of shipment.

I don't know just yet on when next week the HFD's will ship, I'll let you know later this week.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, February 18, 2004 10:20 AM  
To: sal@advancedburner.com; Pam Snyder  
Cc: tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com  
Subject: RE: ABT Burner Shipping Status

Sal this could impact TEI as they will want to start work at the first of the outage installing the VFDs.

When you respond with and ETA please provide the following information:

1. Provide a contact with the trucking company so that we can track the shipment like we have done with Pacer and the burners.
2. Provide information as to where the VFDs, HFDs, and related hardware are coming from and is the shipment to be shipped on a flatbed or be inclosed truck.

Note: James this should address your email requesting the status of the flow straightening devices.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/17/2004 11:58:47 AM  
>>>

Howard,  
We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, February 17, 2004 12:27 PM  
To: Pam Snyder  
Cc: sal@advancedburner.com; tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com

IP7\_028533

Subject: ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**CC:** <tarkel@advancedburner.com>, <truckdispatch@aol.com>, "James Nelson" <JIM-N@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028534**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "'Howard Hamilton'" <howard-h@ipsc.com>, "'Pam Snyder'" <PAM-S@ipsc.com>  
**Date:** 2/20/2004 2:09:22 PM  
**Subject:** RE: ABT Burner Shipping Status

Howard,  
The VFD's and ceramic installation kits shipped today via ABF Freight.  
ABF Time Saver #OFY3100514-A, ABT Freight System 310 216 025. Delivery noted on bill of lading to be by 2/25.  
The HFD's will ship by next Friday, 2/27.  
Sal

-----Original Message-----

From: Salvatore Ferrara [mailto:sal@advancedburner.com]  
Sent: Wednesday, February 18, 2004 4:13 PM  
To: 'Howard Hamilton'; 'Pam Snyder'  
Cc: 'tarkel@advancedburner.com'; 'truckdispatch@aol.com'; 'James Nelson'; 'ssteede@teiservices.com'  
Subject: RE: ABT Burner Shipping Status

Howard,  
The VFD's and ceramic kits will complete by this Friday and we will ship them then, as not to impact your planned installation at the first of the outage. I'll provide you with the truck information at time of shipment.  
I don't know just yet on when next week the HFD's will ship, I'll let you know later this week.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, February 18, 2004 10:20 AM  
To: sal@advancedburner.com; Pam Snyder  
Cc: tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com  
Subject: RE: ABT Burner Shipping Status

Sal this could impact TEI as they will want to start work at the first of the outage installing the VFDs.

When you respond with and ETA please provide the following information:

1. Provide a contact with the trucking company so that we can track the shipment like we have done with Pacer and the burners.
2. Provide information as to where the VFDs, HFDs, and related hardware are coming from and is the shipment to be shipped on a flatbed or be inclosed truck.

Note: James this should address your email requesting the status of the flow straightening devices.

**IP7\_028535**



>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/17/2004 11:58:47 AM  
>>>

Howard,

We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]

Sent: Tuesday, February 17, 2004 12:27 PM

To: Pam Snyder

Cc: sal@advancedburner.com; tarkel@advancedburner.com;  
truckdispatch@aol.com; James Nelson; ssteede@teiservices.com

Subject: ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

CC: <tarkel@advancedburner.com>, <truckdispatch@aol.com>, "James Nelson"  
<JIM-N@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028536**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/4/2004 12:57:48 PM  
**Subject:** RE: HFDs

Howard,  
See attached for quantity of 4 that were picked up at JMS yesterday afternoon.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Thursday, March 04, 2004 12:09 PM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com; Phil Finlinson; ssteede@teiservices.com  
Subject: HFDs

Where anymore HFDs shipped yesterday?

**CC:** <tarkel@advancedburner.com>, "Phil Finlinson" <PHIL-F@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028537**

ABF FREIGHT 24-011-04  
3-3-04

TO: INTERMOUNTAIN GENERATING STATION FROM: IMS FABRICATED SPEEDWAYS  
850 WEST BRUSH WELLMAN ROAD 201 HILLVIEW AVENUE  
DELTA UTAH Zip Code 84624 LATROBE PA Zip Code 15650  
ATTN: JAMES NELSON

No. Shipping Units	Weight (Subject to Commodity)	Rate	CHARGES
4 SKIDS	CERAMIC LINED STEEL	2600*	50

CONTRACT # DA-45606  
CALL 24 HOURS PRIOR TO DELIVERIES  
DELIVERY M-S 7:00 A.M. - 5:00 P.M.  
A.B.T. A03-008-417  
PHONE # 435-864-6670

ABF TIME SAVER QUOTE # NN23100634-A

ABF 310 216 153

REMI  
C.O.D. 112  
ADDRESS

COD Amt: \$

C.O.D. FEE  
PREPAID  
COLLECT  
TOTAL  
CHARGES \$

FREIGHT CHARGES  
Check Appropriate Box  
1. Freight prepaid

SHIPPER

PER

Permanent postage address of shipper

CARRIER

PER

DATE

MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS  
For further details on SHIPPING HAZARDOUS MATERIALS see Federal Regulations 49 CFR Part 172.

310 216 153

IP7\_028538



PH: 724-537-6365 FAX: 724-537-7281  
E-MAIL: jims&jmsind.net

---

## PACKING LIST

**JMS Job #24-011**

**Date: 03/02/04**

---

**SHIP TO:** Intermountain Generating Station  
850 West Brush Wellman Road  
Delta, Utah 84624  
Attn: James Nelson  
Contract #04-45606  
Intermountain Station Phone: 1-435-864-6670

---

**A.B.T. PO #A03-008-417**

---

**SHIPPED VIA: ABF Freight – Prepaid & Add**

---

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	04	Opti-Flow Burner Horizontal Fuel Distributor Deflector Assembly per A.B.T. Drawing #03008-500-A02-D0.
Quantity Back Ordered = 30.		

---

IP7\_028539

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/8/2004 7:04:37 AM  
**Subject:** RE: HFDs and Perforated Plate Shipments

Howard,  
2 HFD's were picked up Friday evening at JMS. See attached shipping documents. As of Friday a total of 20 HFD's have shipped. I'll let you know later today on schedule for completion of the remaining 28.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Friday, March 05, 2004 12:23 PM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com  
Subject: HFDs and Perforated Plate Shipments

Where there anymore shipment of HFDs and Perf Plated yesterday.

**CC:** <tarkel@advancedburner.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

IP7\_028540

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/8/2004 8:48:02 AM  
**Subject:** RE: HFDs and Perforated Plate Shipments

Howard,  
10 more HFD's will be complete by the end of the day. (I'll forward you the tracking info when the load is picked up later this afternoon).  
Out the remaining 18, metal fabrication is complete and tiles are being cut for all with 8 in process of being lined. We will continue to ship each day (4-5 assemblies/day) as they complete. The JMS shop is committed to complete by this Friday 3/12 and based on progress this past weekend, I believe they can do it. I'll keep you posted on progress each day.

Sal

-----Original Message-----

From: Salvatore Ferrara [mailto:sal@advancedburner.com]  
Sent: Monday, March 08, 2004 9:01 AM  
To: 'Howard Hamilton'  
Cc: 'tarkel@advancedburner.com'; James Nelson; Phil Hailes  
Subject: RE: HFDs and Perforated Plate Shipments

Howard,  
2 HFD's were picked up Friday evening at JMS. See attached shipping documents. As of Friday a total of 20 HFD's have shipped. I'll let you know later today on schedule for completion of the remaining 28.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Friday, March 05, 2004 12:23 PM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com  
Subject: HFDs and Perforated Plate Shipments

Where there anymore shipment of HFDs and Perf Plated yesterday.

**CC:** <tarkel@advancedburner.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

IP7\_028541

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/8/2004 10:50:46 AM  
**Subject:** RE: HFDs and Perforated Plate Shipments

Howard,  
The shipment is being sent ABF freight as was done on previous shipments, with their express service. I believe they will guarantee delivery by at least Friday this week. With a dedicated truck you still won't be guaranteed a faster service.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Monday, March 08, 2004 11:40 AM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: RE: HFDs and Perforated Plate Shipments

Will today's shipment be send by common carrier, or dedicated truck?

Common Carrier has been taking 5 to 6 days to get here.

A dedicated truck should make it in 2 days.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 3/8/2004 8:44:02 AM  
>>>

Howard,  
10 more HFD's will be complete by the end of the day. (I'll forward you the tracking info when the load is picked up later this afternoon). Out the remaining 18, metal fabrication is complete and tiles are being cut for all with 8 in process of being lined. We will continue to ship each day (4-5 assemblies/day) as they complete. The JMS shop is committed to complete by this Friday 3/12 and based on progress this past weekend, I believe they can do it. I'll keep you posted on progress each day.  
Sal

-----Original Message-----

From: Salvatore Ferrara [mailto:sal@advancedburner.com]  
Sent: Monday, March 08, 2004 9:01 AM  
To: 'Howard Hamilton'  
Cc: 'tarkel@advancedburner.com'; James Nelson; Phil Hailes  
Subject: RE: HFDs and Perforated Plate Shipments

Howard,  
2 HFD's were picked up Friday evening at JMS. See attached shipping documents. As of Friday a total of 20 HFD's have shipped. I'll let you know later today on schedule for completion of the remaining 28.  
Sal

IP7\_028542

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]

Sent: Friday, March 05, 2004 12:23 PM

To: sal@advancedburner.com

Cc: tarkel@advancedburner.com

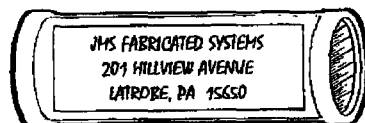
Subject: HFDs and Perforated Plate Shipments

Where there anymore shipment of HFDs and Perf Plated yesterday.

**CC:** <tarkel@advancedburner.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>







PH: 724-537-6365 FAX: 724-537-7281  
E-MAIL: jims&jmsind.net

---

## PACKING LIST

**JMS Job #24-011**

**Date: 03/05/04**

---

**SHIP TO:** Intermountain Generating Station  
850 West Brush Wellman Road  
Delta, Utah 84624  
Attn: James Nelson  
Contract #04-45606  
Intermountain Station Phone: 1-435-864-6670

---

**A.B.T. PO #A03-008-417**

---

**SHIPPED VIA: ABF Freight - Prepaid & Add**

---

<b>QUANTITY ORDERED</b>	<b>QUANTITY SHIPPED</b>	<b>DESCRIPTION</b>
48	02	Opti-Flow Burner Horizontal Fuel Distributor Deflector Assembly per A.B.T. Drawing #03008-500-A02-D0.
Quantity Back Ordered = 28		

---

IP7\_028545

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 3/9/2004 1:54:18 PM  
**Subject:** RE: Shipping Status of ABT Material 03/09/09

Howard,  
The angle and solid plate for the windbox baffling will most likely ship tomorrow on dedicated truck from PCW (we're trying to locate a tandem team truck however if we are unsuccessful, it won't arrive in Delta until Monday 3/15). I'll send you the paper work tomorrow when the load is picked up.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, March 09, 2004 2:38 PM  
To: Pam Snyder  
Cc: sal@advancedburner.com; tarkel@advancedburner.com; Gary Goold; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Shipping Status of ABT Material 03/09/09

The following is the shipping status of perforated plate and HFDs from ABT.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

Presently: Received 3/5/04

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

Presently: Received 3/5/04

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: Received 3/9/04

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

Presently: Received 3/05/04

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

Presently: Received 3/5/04

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

IP7\_028546

Presently: Received 3/8/04

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310214052

Presently: Shipment is in Salt Lake City.

8. 10 Horizontal Fuel Diffusers, weighing 6200 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310216164.

Presently: To arrive in Omaha, Nebraska at 23:47 today.

Sal: Where is the angle and solid plate for the windbox baffling.

**CC:** <tarkel@advancedburner.com>, "'Gary Goold"' <GARY-G@ipsc.com>, "'James Nelson"' <JIM-N@ipsc.com>, "'Phil Hailes"' <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/9/2004 7:23:41 AM  
**Subject:** RE: HFDs and Perforated Plate Shipments

Howard,  
See attached shipping documents. ABF guaranteed delivery by 5 pm on Friday, 3/12.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Monday, March 08, 2004 7:46 PM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com; James Nelson; Phil Hailes  
Subject: RE: HFDs and Perforated Plate Shipments

What is the PRO# for this shippment?

>>> "Salvatore Ferrara" <sal@advancedburner.com> 3/8/2004 8:44:02 AM  
>>>

Howard,  
10 more HFD's will be complete by the end of the day. (I'll forward you the tracking info when the load is picked up later this afternoon). Out the remaining 18, metal fabrication is complete and tiles are being cut for all with 8 in process of being lined. We will continue to ship each day (4-5 assemblies/day) as they complete. The JMS shop is committed to complete by this Friday 3/12 and based on progress this past weekend, I believe they can do it. I'll keep you posted on progress each day.  
Sal

-----Original Message-----

From: Salvatore Ferrara [mailto:sal@advancedburner.com]  
Sent: Monday, March 08, 2004 9:01 AM  
To: 'Howard Hamilton'  
Cc: 'tarkel@advancedburner.com'; James Nelson; Phil Hailes  
Subject: RE: HFDs and Perforated Plate Shipments

Howard,  
2 HFD's were picked up Friday evening at JMS. See attached shipping documents. As of Friday a total of 20 HFD's have shipped. I'll let you know later today on schedule for completion of the remaining 28.  
Sal

-----Original Message-----

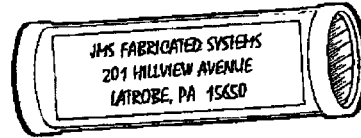
From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Friday, March 05, 2004 12:23 PM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com  
Subject: HFDs and Perforated Plate Shipments

IP7\_028548

Where there anymore shipment of HFDs and Perf Plated yesterday.

**CC:** <tarkel@advancedburner.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>





PH: 724-537-6365 FAX: 724-537-7281  
E-MAIL: jms&jmsind.net

## PACKING LIST

**JMS Job #24-011**  
**Date: 03/08/04**

**SHIP TO:** Intermountain Generating Station  
850 West Brush Wellman Road  
Delta, Utah 84624  
Attn: James Nelson  
Contract #04-45606  
Intermountain Station Phone: 1-435-864-6670

**A.B.T. PO #A03-008-417**

**SHIPPED VIA: ABF Freight - Prepaid & Add**

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	10	Opti-Flow Burner Horizontal Fuel Distributor Deflector Assembly per A.B.T. Drawing #03008-500-A02-D0.
Quantity Back Ordered = 18		

IP7\_028551



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 3/11/2004 11:59:53 AM  
**Subject:** RE: Subject: Shipping Status of ABT Material 3/11/04

Howard,  
The remaining 10 HFD's are expected to complete tomorrow and trucking is currently being arranged for pickup. I will let you know the trucking details once finalized and pick up complete.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Thursday, March 11, 2004 12:55 PM  
To: Pam Snyder  
Cc: sal@advancedburner.com; tarkel@advancedburner.com; Gary Goold; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Subject: Shipping Status of ABT Material 3/11/04

The following is the shipping status of perforated plate and HFDs from ABT.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

Presently: Received 3/5/04

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

Presently: Received 3/5/04

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: Received 3/9/04

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

Presently: Received 3/05/04

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961,  
wt 3600 lbs

Presently: Received 3/5/04

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310216153.

IP7\_028552

Presently: Received 3/8/04

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310214052

Presently: Loaded on UTAW today at

8. 10 Horizontal Fuel Diffusers, weighing 6200 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310216164.

Presently: Shipment is on a Utah and Wyoming truck.

9. 8 Horizontal Fuel Diffusers, weighing 6000 lbs - shipped from Latrobe, PA via Mercer Transportation.

Presently: Shipment is in St Louis, Missouri

Note: Drivers Randy and Donna Ridel can be contacted at 412-855-0228 or 412-289-9662. They figure to be in Utah on Friday (3/12/04)

10. 12 - 4'x10' sheets of 11 GA plate, 105 - 3" channel x 6.7 lb/ft x 40' and 13 - 6" channel x 6.7 lb/ft shipped out from Passaic County Welders via Pacer Transportation. This is a single driver and not a tag team truck. Truck should be on site Monday (3/15/04).

Presently: Load was picked up on Wednesday Afternoon 3/10/04.

Sal: We have 20 HFDs on site, 18 are on trucks this is a total of 38. What is the status on the remaining 10 HFDs?

CC: <tarkel@advancedburner.com>, "Gary Goold" <GARY-G@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028553**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 3/11/2004 7:41:54 AM  
**Subject:** RE: Shipping Status of ABT Material 3/10/04

Howard,  
See attached shipping papers for pickups made at PCW and JMS yesterday. Pacer picked up the PCW load (phone no. is 412-343-9909). Mercer Transport picked up the HFD's from JMS. Joe Torrero advised that he gave the driver's cell phone number to James Nelson this morning. The HFD's will arrive in Delta this Friday or Saturday. The channel and plate should arrive this Monday.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, March 10, 2004 11:59 AM  
To: Pam Snyder  
Cc: sal@advancedburner.com; tarkel@advancedburner.com; Gary Goold; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Shipping Status of ABT Material 3/10/04

The following is the shipping status of perforated plate and HFDs from ABT.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

Presently: Received 3/5/04

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

Presently: Received 3/5/04

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: Received 3/9/04

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

Presently: Received 3/05/04

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

Presently: Received 3/5/04

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from

**IP7\_028554**

Latrobe, PA via ABF Freight, Pro no. 310216153.

Presently: Received 3/8/04

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310214052

Presently: Loaded on UTAW today at

8. 10 Horizontal Fuel Diffusers, weighing 6200 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310216164.

Presently: To arrive in Cheyenne, Wyoming today at 14:45

,

Sal:

What is the PRO # for the angle and plate.

How is next shipment of HFDs being sent and who do we contact for shipping status.

CC: <tarkel@advancedburner.com>, "Gary Goold" <GARY-G@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**PASSAIC COUNTY WELDERS**

Fabricators of Steel and Alloy Products

100 Parish Drive  
Wayne, NJ 07470  
Tel: (973) 696-1200  
FAX: (973) 696-1411

## PACKING LIST

9794

**Bill to:**

Advanced Burner Technologies  
271 Rte 202/206  
P.O.Box 410  
Pluckemin, NJ 07978

**Ship to:**

Intermountain Gen. Station  
850 West Brush Wellman Road  
Delta, UT 84624

SHIP VIA pacer	FOB	TERMS NET 30 DAYS	SHOP ORDER NO. 21362
ORDER DATE 03/07/04	REQUIRED DATE 03/10/04	CUSTOMER NO. A03-008-410	PAGE NO. 1

QUANTITY	UNIT	PART NO./DESCRIPTION	UNIT PRICE	AMOUNT
1		<p>IPSC Misc Steel as follows:</p> <p>1 fabricated channel 39" long</p> <p>12 4' x 10' sheets of 11GA HRS Plate</p> <p>105 3" channel x 4.1#/ft x 40' A36</p> <p>13 6" channel x 6.7#/ft x 40' A36</p>		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

/// SHIPPED ON 3/10/04 ///

Signature X

*J. Demarest*  
PCW

IP7\_028556

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/8/2004 7:04:37 AM  
**Subject:** RE: HFDs and Perforated Plate Shipments

Howard,  
2 HFD's were picked up Friday evening at JMS. See attached shipping documents. As of Friday a total of 20 HFD's have shipped. I'll let you know later today on schedule for completion of the remaining 28.  
Sal

-----Original Message-----  
From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Friday, March 05, 2004 12:23 PM  
To: sal@advancedburner.com  
Cc: tarkel@advancedburner.com  
Subject: HFDs and Perforated Plate Shipments

Where there anymore shipment of HFDs and Perf Plated yesterday.

**CC:** <tarkel@advancedburner.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>

IP7\_028557

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 3/11/2004 7:41:54 AM  
**Subject:** RE: Shipping Status of ABT Material 3/10/04

Howard,  
See attached shipping papers for pickups made at PCW and JMS yesterday. Pacer picked up the PCW load (phone no. is 412-343-9909). Mercer Transport picked up the HFD's from JMS. Joe Torrero advised that he gave the driver's cell phone number to James Nelson this morning. The HFD's will arrive in Delta this Friday or Saturday. The channel and plate should arrive this Monday.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, March 10, 2004 11:59 AM  
To: Pam Snyder  
Cc: sal@advancedburner.com; tarkel@advancedburner.com; Gary Goold; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: Shipping Status of ABT Material 3/10/04

The following is the shipping status of perforated plate and HFDs from ABT.

1. 27 sheets of 4' x 8' 11 GA, perforated steel plate 48% open - shipped from Chicago via CCX tracking PRO no. 949854813.

Presently: Received 3/5/04

2. 24 sheets of 4' x 10' 11 GA, perforated steel plate 60% open - shipped from LA via Fedex PRO no. 715131165.

Presently: Received 3/5/04

3. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA via ABF Freight, Pro no. 310215649

Presently: Received 3/9/04

4. 12 Horizontal Fuel Diffusers, weighing 7200 lbs. shipped from Latrobe, PA via ABF Freight, Pro no. 310214050.

Presently: Received 3/05/04

5. 50 sheets of 4' x 10' x 11 GA. perforated steel plate 40 % open -shipped from Chicago via CCX tracking PRO no. 949854861 and 779854961, wt 3600 lbs

Presently: Received 3/5/04

6. 4 Horizontal Fuel Diffusers, weighing 2600 lbs - shipped from

**IP7\_028558**

Latrobe, PA via ABF Freight, Pro no. 310216153.

Presently: Received 3/8/04

7. 2 Horizontal Fuel Diffusers, weighing 1300 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310214052

Presently: Loaded on UTAW today at

8. 10 Horizontal Fuel Diffusers, weighing 6200 lbs - shipped from Latrobe, PA Via ABF Freight, Pro no. 310216164.

Presently: To arrive in Cheyenne, Wyoming today at 14:45

,

Sal:

What is the PRO # for the angle and plate.

How is next shipment of HFDs being sent and who do we contact for shipping status.

**CC:** <tarkel@advancedburner.com>, "Gary Goold" <GARY-G@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>





PASSAIC COUNTY WELDERS

Fabricators of Steel and Alloy Products

100 Parish Drive  
Wayne, NJ 07470  
Tel: (973) 686-1200  
FAX: (973) 686-1411

PACKING LIST

9794

Bill to:  
Advanced Burner Technologies  
271 Rte 202/206  
P.O. Box 410  
Pluckemin, NJ 07978

Ship to:  
Intermountain Gen. Station  
850 West Brush Wellman Road  
Delta, UT 84624

SHIP VIA pacer		FOB		TERMS NET 30 DAYS	SHOP ORDER NO 21362
ORDER DATE 03/07/04	REQUIRED DATE 03/10/04	CUSTOMER NO. A03-008-410		INSTRUCTIONS	PAGE NO. 1

QUANTITY	UNIT	PART NO./DESCRIPTION	UNIT PRICE	AMOUNT
1		<p>IPSC Misc Steel as follows:</p> <p>1 fabricated channel 39" long</p> <p>12 4' x 10' sheets of 11GA HRS Plate</p> <p>106 3" channel x 4.1#/ft x 40' A36</p> <p>13 5" channel x 6.7#/ft x 40' A36</p>		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

/// SHIPPED ON 3/10/04 ///

Signature X

*J. Demarest*  
PCW

IP7\_028560

ALTERNATE STRAIGHT BILL OF LADING - SHORT FORM

Original Not Negotiable

Shipper's Date 24-01-07  
 Date 3-10-04

MERCER TRANSPORTATION

TO: INTERMOUNTAIN GENERATING STATION FROM: JMS FABRICATED SYSTEMS  
 Consignee Shipper  
 Street 850 WEST BROSHEIM ROAD Street 201 HILLVIEW AVENUE  
 Destination DELTA UTAH Zip Code 84624 Origin LATROBE PA Zip Code 15650  
 Route ATTN: JAMES NELSON Vehicle Number EMERGENCY RESPONSE PHONE NO.

No. of Shipping Units	Kind of Packaging, Description of Articles, Special Marks and Exceptions	Weight (Net Weight)	Rate	CHARGES (for Carrier use only)
8	SKIDS CERAMIC LINED STEEL	6000#	50	

CONTRACT # 04-45606  
 CALL 24 HOURS PRIOR TO DELIVERY  
 DELIVERY M-S 7:00 A.M. - 5:00 P.M.  
 A.B.T. A03-008-417  
 PHONE# 435-864-6670

"LOAD MUST BE TARRIED"

COPIES

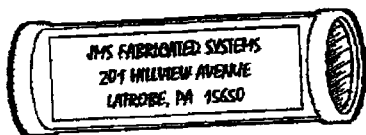
James M. Nelson  
 3/10/04  
 JMS FABRICATED SYSTEMS  
 201 HILLVIEW AVENUE  
 LATROBE, PA 15650  
 412-435-8646

Thursday, March 11, 2004 5:12 AM

Jim Schmucker 1-724-537-7281

p 02

IP7\_028561



PH: 724-537-6365 FAX: 724-537-7281  
E-MAIL: jims&jmsind.net

## PACKING LIST

JMS Job #24-011

Date: 03/10/04

SHIP TO: Intermountain Generating Station  
850 West Brush Wellman Road  
Delta, Utah 84624  
Attn: James Nelson  
Contract #04-45606  
Intermountain Station Phone: 1-435-864-6670

A.B.T. PO #A03-008-417

SHIPPED VIA: Mercer Transportation - Prepaid & Add

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	08	Opti-Flow Burner Horizontal Fuel Distributor Deflector Assembly per A.B.T. Drawing #03008-500-A02-D0.
Quantity Back Ordered = 10		

IP7\_028562

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/3/2004 2:01:38 PM  
**Subject:** RE: Contract 04-45606, Windbox Perforated Plates

Howard,

50 sheets, 40% open area, perf. plate shipped today via CCX (from 2 different locations due to large quantity). CCX phone is 800-755-2728, pro #'s 949854861 and 778967933.

I'm still working on the solid plate, stiffeners and drawings.

Regards,

Sal

-----Original Message-----

From: Salvatore Ferrara [mailto:sal@advancedburner.com]  
Sent: Tuesday, March 02, 2004 4:34 PM  
To: Howard Hamilton (howard-h@ipsc.com)  
Cc: James Nelson; Phil Hailes; Tarkel Larson (tarkel@advancedburner.com)  
Subject: Contract 04-45606, Windbox Perforated Plates

Howard,

Following perforated plate for installation in the burner windboxes, 4' x 10' sheets-11 gauge, have shipped from McNichols Co.:

27 sheets, 48% open area, from Chicago via CCX (800-755-2728), tracking no. 949854813

24 sheets, 60% open area, from LA via FED-X (800-463-3339), tracking no. 715131165

The rest of the perforated plate, 50 sheets, 40% open area, will be shipping tomorrow. I will provide you with the truck information then.

I am in the process of ordering the remaining material for installation in the burner windboxes (qty 12, 4' x 10' sheets-11 gauge plate and angles for stiffening). All windbox material is carbon steel. Drawings showing locations of plate are currently being finalized and I will forward them to you as soon as they are released to me.

**IP7\_028563**

Regards,

Sal

**CC:** "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>,  
"Tarkel Larson" <tarkel@advancedburner.com>

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "James Nelson" <JIM-N@ipsc.com>, "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/2/2004 9:53:30 AM  
**Subject:** RE: IPSC Contract 04-45606

I will be obtaining and providing you daily updates on the JMS work/shipping status.  
Sal

-----Original Message-----

From: James Nelson [mailto:JIM-N@ipsc.com]  
Sent: Tuesday, March 02, 2004 11:11 AM  
To: <"Salvatore Ferrara"; Howard Hamilton  
Cc: tarkel@advancedburner.com; Phil Hailes  
Subject: Re: IPSC Contract 04-45606

This makes me extremely nervous. We need daily update and confirmation as to ship date of all diffusers with the remaining hardware (ceramic, etc) and we need to coordinate this with TEI asap. There could very well be costs from the installer for holding up his installation plan. These are very late. He already has two rows of burners installed and expect all burners will be in place before the end of the week.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 3/2/2004 8:31:18 AM  
>>>  
Howard,

The first shipment of 12 HFD's were picked up yesterday at the JMS shop in Latrobe, PA. Attached are the shipping documents. We contacted ABF Freight today and they promised delivery to IPP this Friday by 5:00 PM.

JMS had problems obtaining ceramic materials to complete the work by end of last week. They have all ceramic on hand now and are expediting completion. I'll let you know later today when the next shipment is expected to be leaving the JMS shop. We'll try to make a shipment each day in order to maintain a steady flow of HFD's to keep your installers going.

Sal

**CC:** <tarkel@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>

**IP7\_028565**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/2/2004 2:57:09 PM  
**Subject:** Contract 04-45606, HFD Shipment

Howard,

See attached paperwork for shipment that was picked up at JMS today. These were shipped by ABF's express service "TimeKeeper Service". I expect at least 4 more HFD's to be ready to ship tomorrow.

Sal

**CC:** "Tarkel Larson" <tarkel@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>

**IP7\_028566**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 3/2/2004 8:35:22 AM  
**Subject:** IPSC Contract 04-45606

Howard,

The first shipment of 12 HFD's were picked up yesterday at the JMS shop in Latrobe, PA. Attached are the shipping documents. We contacted ABF Freight today and they promised delivery to IPP this Friday by 5:00 PM.

JMS had problems obtaining ceramic materials to complete the work by end of last week. They have all ceramic on hand now and are expediting completion. I'll let you know later today when the next shipment is expected to be leaving the JMS shop. We'll try to make a shipment each day in order to maintain a steady flow of HFD's to keep your installers going.

Sal

**CC:** "Tarkel Larson" <tarkel@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>

IP7\_028567



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 2/18/2004 2:16:41 PM  
**Subject:** RE: ABT Burner Shipping Status

Howard,  
The VFD's and ceramic kits will complete by this Friday and we will ship them then, as not to impact your planned installation at the first of the outage. I'll provide you with the truck information at time of shipment.

I don't know just yet on when next week the HFD's will ship, I'll let you know later this week.

Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, February 18, 2004 10:20 AM  
To: sal@advancedburner.com; Pam Snyder  
Cc: tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com  
Subject: RE: ABT Burner Shipping Status

Sal this could impact TEI as they will want to start work at the first of the outage installing the VFDs.

When you respond with and ETA please provide the following information:

1. Provide a contact with the trucking company so that we can track the shipment like we have done with Pacer and the burners.
2. Provide information as to where the VFDs, HFDs, and related hardware are coming from and is the shipment to be shipped on a flatbed or be inclosed truck.

Note: James this should address your email requesting the status of the flow straightening devices.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 2/17/2004 11:58:47 AM  
>>>

Howard,  
We are a little behind on fabrication of the VFD, HFDs and related hardware. These may not ship until next week. I'll give you a more definitive date later this week.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, February 17, 2004 12:27 PM  
To: Pam Snyder  
Cc: sal@advancedburner.com; tarkel@advancedburner.com; truckdispatch@aol.com; James Nelson; ssteede@teiservices.com

IP7\_028568

Subject: ABT Burner Shipping Status

1. 9th load received 2/17/04
2. 10th load not received to date. Pacer is in the process of tracking down this truck that has not reported in since Friday (2/13/04)
3. 11th load was delivered today - It also had 12 of the 48 ring replacements.
4. 12th and final load will be picked up this afternoon. This load will carry the remaining 36 ring replacements.

Note ABT will also be sending out the VFD, HFDs and related hardware by truck to arrive by 2/23/04.

**CC:** <tarkel@advancedburner.com>, <truckdispatch@aol.com>, "James Nelson" <JIM-N@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028569**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Pam Snyder" <PAM-S@ipsc.com>  
**Date:** 3/2/2004 11:41:43 AM  
**Subject:** RE: HFDs (Horizontal Fuel Deflectors)

Howard,  
I just realized this morning that an express delivery wasn't requested and delivery would have been next Monday. I then had JMS get in touch with ABF and change the status to express, hence the truck change in Ohio. The remaining shipments will be express delivery.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, March 02, 2004 12:42 PM  
To: Pam Snyder  
Cc: sal@advancedburner.com; tarkel@advancedburner.com; Gary Goold; James Nelson; Phil Hailes; ssteede@teiservices.com  
Subject: HFDs (Horizontal Fuel Deflectors)

ABT is shipping the 48 fuel deflectors we need for the Unit 2 Burners via ABF Freight Company on 12 Pallets.

ABFs PRO# is 310214050.

ABF tracking shows that 12 pallets were shipped on Monday March 1st with an ETA of Friday, March 5th.

Presently our shipment is in Daytona, Ohio being unloaded.

Sal: As important as this shipment is why was it not sent direct on a dedicated truck. Having to load and unload the shipment will cost days in time.

Pam: As soon as this shipment hits Post 3 have the guard call me.  
Thanks.

**CC:** <tarkel@advancedburner.com>, "Gary Goold" <GARY-G@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <ssteede@teiservices.com>

**IP7\_028570**

24-011-3  
3-2-64

ABF FREIGHT

INTERMOUNTAIN GENERATING STATION  
850 WEST BRUSH WELLMAN ROAD  
DELTA, UTAH 84624  
ATTN: JAMES NELSON  
2 SKIDS : CERAMIC LINED STEEL

JMS FABRICATED SYSTEMS  
201 HILLVIEW AVENUE  
LATROBE PA 15650

Weight: 1300\*  
Length: 50

CONTRACT # 84-4566X  
CALL 24 HOURS PRIOR TO DELIVERIES  
DELIVERY M-S 7:00 A.M. - 5:00 P.M.  
A.B.T. A03-008-417  
PHONE # 435-864-6670

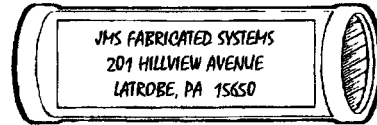
ABF TIME SAVER QUOTE # 4TN31006024

ABF - HIGHT SYSTEM  
310 215 649  
Direct signature only acknowledge receipt of freight  
material and inspect for damage and condition  
of Uniform Division Bill of Lading and ABF's tariff.

COD

REMIT  
COD TO  
ADDRESS

SHIPPER PER James M. Nelson		CARRIER JMS		DATE 3/2/64	
PERMANENT POST OFFICE ADDRESS OF SHIPPER		DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS		1	
MATERIAL 5 per Federal Regulations 49 CFR Part 172					



PH: 724-537-6365 FAX: 724-537-7281  
E-MAIL: jims&jmsind.net

## PACKING LIST

**JMS Job #24-011**

**Date: 03/02/04**

**SHIP TO: Intermountain Generating Station**  
850 West Brush Wellman Road  
Delta, Utah 84624  
Attn: James Nelson  
Contract #04-45606  
Intermountain Station Phone: 1-435-864-6670

**A.B.T. PO #A03-008-417**

**SHIPPED VIA: ABF Freight – Prepaid & Add**

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	02	Opti-Flow Burner Horizontal Fuel Distributor Deflector Assembly per A.B.T. Drawing #03008-500-A02-D0.
Quantity Back Ordered = 34		

IP7\_028572

ABF FREIGHT 1724-836-6605 24-011-2 31-04

TO:	INTERMOUNTAIN GENERATOR & STARTER	FROM:	JMS FABRICATED SYSTEMS
Company:	850 WEST BRUSHWELLMAN ROAD	Shipper:	201 HILLVIEW AVENUE
Street:	DELTA, UTAH	Street:	LATROBE PA
Zip:	84624	Origin:	PA 15650

No Shipping Units		+ HM		ATTN JAMES NOBLE		Description of Articles.		Weight (Gross Net)		Rate		CHARGES	
12 SKIDS						CERAMIC LINED STEEL		7800 #		50		[unclear] 1000 1000 1000	

CONTRACT # 04-45666  
CALL 24 HRS PRIOR TO DELIVERIES  
DELIVERY M-S 7:00 A.M. - 5:00 P.M.  
A.B.T. # A03-008-417  
PHONE # 435-864-6670

ARF Volume Quote # RH 23100614-A

310 214 050

REMIT  
COD TL  
ADDRES

[illegible]

$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & i \\ 1 & -i \end{pmatrix}$	$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & -i \\ 1 & i \end{pmatrix}$	$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & i \\ -1 & i \end{pmatrix}$	$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & -i \\ -1 & -i \end{pmatrix}$
--	--	--	--

[illegible]

of a calicheite structure (Fig. 2), a comparable structure is available in the literature (Fig. 3). The classification of a mineral as a calicheite is based on the presence of the calicheite structure. The classification of a mineral as a calicheite is based on the presence of the calicheite structure. The classification of a mineral as a calicheite is based on the presence of the calicheite structure.

SHIPPER Full 1 11/20

PER 3/1/08 MARK W  
Permanent post office address, if different:

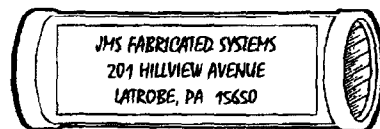
**Tops**

(c) 100% cotton  
MA  
Par

\_\_\_\_\_

\_\_\_\_\_

**IP7\_028573**



PH: 724-537-6365 FAX: 724-537-7281  
E-MAIL: jims&jmsind.net

---

## PACKING LIST

**JMS Job #24-011**

**Date: 03/01/04**

---

**SHIP TO:** Intermountain Generating Station  
850 West Brush Wellman Road  
Delta, Utah 84624  
Attn: James Nelson  
Contract #04-45606  
Intermountain Station Phone: 1-435-864-6670

---

**A.B.T. PO #A03-008-417**

---

**SHIPPED VIA: ABF Freight – Prepaid & Add**

---

QUANTITY ORDERED	QUANTITY SHIPPED	DESCRIPTION
48	12	Opti-Flow Burner Horizontal Fuel Distributor Deflector Assembly per A.B.T. Drawing #03008-500-A02-D0.

IP7\_028574

**From:** "Sal Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 5/4/2004 12:01:24 PM  
**Subject:** RE: Turning Vane Details

Howard,  
We are planning to have these details complete by June 1, 2004. I'll let you know if there is any change in this schedule.  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Tuesday, May 04, 2004 11:10 AM  
To: sal@advancedburner.com  
Cc: James Nelson; Phil Hailes  
Subject: Turning Vane Details

I have not heard back from you concerning a schedule to have the detail drawings for the turning vanes, division walls and straightening plates for the secondary air duct and the windboxes.

When do you plan to release these drawings?

---

This message scanned for viruses by CoreComm

**CC:** "Alan Paschedag" <alan@advancedburner.com>, "Phil Hailes" <Phil-H@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>

**IP7\_028575**



**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 12/17/2003 12:58:12 PM  
**Subject:** Contract 04-45606, Burner Model

Howard,

Attached is a drawing showing 3-d model of the burner we've designed for this contract. To open this you need the E-Drawing 2004 viewer which is a free download from the "solidworks.com" website.

I received a message that you called and asked if we can provide shrink wrap on the burner. Which components would you like to see shrink wrapped (knowing this I can obtain a fixed price from our fabricator to apply the shrink wrap accordingly).

Sal

**CC:** "Phil Hailes" <Phil-H@ipsc.com>

**IP7\_028576**

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Phil Hailes" <Phil-H@ipsc.com>, <joel@advancedburner.com>, "Howard Hamilton" <howard-h@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>  
**Date:** 1/19/2004 8:21:26 AM  
**Subject:** RE: ABT Burner First Shipment Delayed

Phil,

The burner throat castings started arriving at PCW last Wednesday (qty 2) and PCW has received shipments Thursday (qty 2) and Friday (qty 3) as well. PCW is installing the castings on the burner registers as they arrive. I expect the first truckload (at least 3 burners, or 4 if truck size will allow) to ship this Thursday, 1/22. Starting next week we will ship an average of 3 truck loads per week. The last truckload is expected to leave the PCW shop by Friday, 2/20.

Regards,  
Sal

-----Original Message-----

From: Phil Hailes [mailto:Phil-H@ipsc.com]  
Sent: Saturday, January 10, 2004 3:19 PM  
To: joel@advancedburner.com; sal@advancedburner.com; Howard Hamilton; James Nelson  
Subject: ABT Burner First Shipment Delayed

Due to delays in the throat casting delivery, ABT will not be shipping a full truckload of burners until January 23. This will be a truck load of 4 or 5 burners.

I've asked ABT to ship a single burner, if the full shipment date slips beyond this point. The single burner would give us an opportunity to move a burner through the unit and position it. A practice run, so to speak.

ABT and the shop (PCW) is aware that we can not allow the final on-site date of Feb 23 to slip, because of outage concerns.

Because of this delay, in order to reach the final deadline, the weekly burner delivery will have to increase to about 15 burners.

Sal, will you please confirm the delivery schedule, as we discussed, for the burners and throat castings?

IP7\_028577

**From:** "Sal Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>  
**Date:** 1/2/2004 5:03:05 PM  
**Subject:** Re: Burner Gaskets

Howard,  
ABT will be providing the gasket and fasteners between the existing IPSC 90 degree elbow and burner pup (spool piece) that includes the ABT flow distribution device.

regards,  
Sal

----- Original Message -----

From: "Howard Hamilton" <howard-h@ipsc.com>  
To: <sal@advancedburner.com>  
Cc: <TDraپر@centry.net>; "Jerry Finlinson" <Jerry-F@ipsc.com>; "James Nelson" <JIM-N@ipsc.com>; "Phil Hailes" <Phil-H@ipsc.com>; <tsteede@teiservices.com>  
Sent: Wednesday, December 31, 2003 3:57 PM  
Subject: Burner Gaskets

> Will ABT be providing the gasket and fasteners between the existing IPSC  
> 90 degree elbow and burner pup that includes the ABT flow distribution  
> device which are being fabricated by an ABT vendor and being sent  
> separate from the burners.

>  
> If not please advise the gasket and fastener hardware required to make  
> this connection. Reference drawing 03008-100-A00-D0 (Sections A-A and  
> B-B).

>  
>  
>  
>  
>  
>  
>  
>  
>  
>

**CC:** <TDraپر@centry.net>, "Jerry Finlinson" <Jerry-F@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>, <tsteede@teiservices.com>

IP7\_028578

**From:** "Salvatore Ferrara" <sal@advancedburner.com>  
**To:** "Howard Hamilton" <howard-h@ipsc.com>, "Phil Hailes" <Phil-H@ipsc.com>  
**Date:** 1/12/2004 1:55:26 PM  
**Subject:** RE: Contract 04-45606, Burner Model

Howard/Phil,

The cost to shrink wrap the burner modules (to cover all openings on each end of the burner) would be a total of \$18,700 for all 48 assemblies. Please advise by 1/14/04 should you wish to proceed with this change so we have sufficient time to order materials and install in time for the first shipments.

Regards,  
Sal

-----Original Message-----

From: Howard Hamilton [mailto:howard-h@ipsc.com]  
Sent: Wednesday, December 17, 2003 5:22 PM  
To: sal@advancedburner.com; Phil Hailes  
Cc: Gary Goold; James Nelson  
Subject: Re: Contract 04-45606, Burner Model

Phil: Be advised that Steve Kozocowich of ABT called me and requested to know how much of the burner we would like to see shrink wrapped. I advised him that we would want the areas of the burner wrapped that ABT would require to have the burners stored outside. I would image this would be mostly around the front plate of the burner where all of the instruments are to be located.

It would appear that ABT will want to charge us for this wrapping. If they send a quote to me I will make sure that you get a copy. If the price is right it should be implemented as it will give us the option of storing the burners outside, which could be very advantageous. Plus it would provide protection to the vulnerable areas of the burner during shipping and wherever they are staged.

>>> "Salvatore Ferrara" <sal@advancedburner.com> 12/17/2003 12:53:53 PM  
>>>  
Howard,

I received a message that you called and asked if we can provide shrink wrap on the burner. Which components would you like to see shrink wrapped (knowing this I can obtain a fixed price from our fabricator to apply the shrink wrap accordingly).

Sal

IP7\_028579

**CC:** "Gary Goold" <GARY-G@ipsc.com>, "James Nelson" <JIM-N@ipsc.com>

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/6/2004 1:02:36 PM  
**Subject:** Fwd: ABT burner Pitot manifold leak photos - AMC WO NO 50633

Darrell: FYI

>>> Jerry Finlinson 2/5/2004 6:46:21 PM >>>  
FYI,

Today I observed TEI Jon McCarra doing a leak check on the ABT burner Pitot manifold silver brazing welds.  
Each manifold has 11 joints on the total pressure (TP) and 11 joints on the static pressure (SP).  
2 on each side of the 3 pitot couplings, 4 on each side of the cross and a pipe to tubing joint.  
I have enclosed representative photos of the leak check soap bubbles showing leaks, some leaks were small, a couple were very large.

Here's a list of the leaks we found on the 9 burners staged on the rear of the boiler.

7th floor

CW6 - SP, 1 leak on coupling to pitot  
CW3 - TP = 3 leaks, pipe to tubing, top leg of cross, 11:00 pitot coupling  
CW14 2 leaks, SP = bottom 6:00 coupling, TP = bottom 6:00 coupling

6th floor

CW8 - 1 leak, TP - top of cross  
CW4 - 2 leaks, SP tube to pipe, and 11:00 coupling,  
CW5 - 8 leaks, SP - 3 sides of cross, top 11:00 coupling, TP = 2 sides of cross, bottom 6:00 coupling

5th floor

All three burners had no leaks, they appeared to be better welded.

As a percent of burners, 66% of the burners had leaks in the manifold.  
As a percent of joints from the total of  $9 \times 22 = 198$  joints,  $17/198 = 8.5\%$  of joints.

What weld repair remedy would you suggest?

We will check the burners on the boiler front tomorrow.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/4/2004 8:38:38 AM >>>

Jerry,

The tube joints are joined by silver brazing since the soldering process has too low of a temperature rating for our purpose. Andy Chew has it

IP7\_028581

backwards in his response to you. Silver soldering is rated for a working temperature in the 400 to 500°F range. Silver brazing is typically rated upwards of 1100°F working temperature range. Concerning the appearance of the brazed joints, PCW did not clean all the joints in which case you see some of the flux material used in the brazing process. PCW has assured us that the joints are good and will not leak.

Let me know if you have other questions.

Regards,  
Sal

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]

Sent: Tuesday, February 03, 2004 8:17 PM

To: Howard Hamilton; James Nelson; Phil Hailes

Cc: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Subject: Fwd: RE: ABT burner pitot photos - AMC WO NO 50633

FYI,

Here's Air Monitor's response to the photos of the IBAM manifold welding.

Hopefully, they did use silver solder, not brazing.

Sal, please advise.

Jerry

Jerry Finlinson, Engineer

Intermountain Power Service Corp

850 West Brush Wellman Rd

Delta, UT 84624

435-864-6466

fax 0776/6670

[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Andy Chew <[achew@airmonitor.com](mailto:achew@airmonitor.com)> 2/3/2004 4:34:23 PM >>>

Jerry,

Air Monitor agreed to ABT's suggestion of using a sealing method other than

Heliarc welding. Originally they mentioned brazing but we insisted on silver solder because the temperature rating of the silver solder joint is

much higher than that of brazing. You should ask ABT about this but it appears they did not clean the solder joints. They may be good joints and

just not look very pretty. You want to make sure they are pressure tested

before going into service. When we modified the probes we only added additional Total pressure sensor holes to the production manifolds.

Additional Static pressure sensor holes were determined to be not necessary

as they did not improve the performance accuracy of the device. We will be

providing an as built drawing which will include the pressure sensor details. Again, I am expecting to have the final burner test report anytime

now and I will forward to you then.

**IP7\_028582**

Regards,

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
Tel.: 707-521-1709  
Fax: 707-526-2825  
Email: [achew@airmonitor.com](mailto:achew@airmonitor.com)

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Tuesday, February 03, 2004 2:31 PM  
To: Andy Chew; Matt Maragos  
Cc: [khpquip@earthlink.net](mailto:khpquip@earthlink.net)  
Subject: Fwd: ABT burner pitot photos

I'm sending this again, since our email was down yesterday.  
We do know that

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Jerry Finlinson 2/2/2004 2:14:00 PM >>>  
FYI,

We have received our first burner from ABT.  
The Air Monitor pitot manifolds look nice, except for the welds.  
The T's are stainless, it seems preferable to have a nice weld rather  
than the brazing.  
I'm not sure it's what you had in mind. Take a look at the enclosed  
photos.

I'd like to know how you modified the pitots inside. I can see the  
additional holes you drilled in front of the high pressure tube, but I  
can't see any additional holes on the side of the other tube. How  
many  
holes is it supposed to have?  
Are they drilled in the backside? Please provide us a drawing of the  
as built tubes in case we ever need to order another.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

IP7\_028583



**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/3/2004 2:15:42 PM  
**Subject:** Inspection of coal valves

I have requested that Alan Dewsnup inspect all 48 stop coal valves on Monday Morning, March 1.

Alan will mark the coal valves that will need to have the seal plate assembly replaced.

This will let us know if we have enough seal plates on hand and how many if any Maintenance will have to machine.

Can you give be a cost not to exceed so that a requisition can be written for staff approval and Purchasing can issue the required paper work for and extra to the TEI Burner Contract. Assume that 24 valve seal plates will have to be replaced.

**CC:** Alan Dewsnup; James Nelson; Phil Hailes

**IP7\_028584**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/4/2004 9:19:48 AM  
**Subject:** Fwd: Burner Replacement Project

Darrell: FYI - ABT still need to come up with the material for the front plate on the burner so that you can use the correct welding procedure.

>>> Alan Dewsnup 2/3/2004 4:33:23 PM >>>

Howard,

B & W has confirmed that the Burner Mounting Sleeve, item "AL" on drawing no. 269375E is made of mild steel, SA 106B.

Alan

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/6/2004 12:52:29 PM  
**Subject:** Fwd: ONYX IND SERVICE

Here is an email that Jeff Schena dug up for be pertaining to the vacuum truck.

>>> Ralph Newberry 1/27/2004 3:45:11 PM >>>

PO 04-36849 has been issued to Onyx to supply an operator and a vacuum truck for the duration of the outage in march. They will be on-site the morning of the 28th (Sat) to begin setting up. It is understood that TEI will supply an individual to operate the hose end of the unit and their guys will man the truck. It is planned as a 24/7 operation. Insurance is good (according to the contract data base) until July of 2004.

Phil is listed as primary contact and Jeff as back up.

Ralph

**IP7\_028586**

**From:** Howard Hamilton  
**To:** Hugh Loukinas; ssteede@teiservices.com  
**Date:** 2/4/2004 9:44:40 AM  
**Subject:** Fwd: outage-pulverizers

Darrell: FYI - Obviously I'm not the one getting the elbows off - but TEI is committed.

Hugh: get a copy to Isely.

>>> Richard Schmit 2/2/2004 7:49:48 AM >>>

Kelly,

Howard said he could get all the elbows and isolation valves off over the first weekend, then you could sign on to all the mills first thing Monday morning. Towards the end of the outage Howard will need a few days to get the isolation valves back in. will this work for you?

Bruce-note for tagging to leave the burner isolation valve tags off the clearances until the blind flanges get put on.

Richard F. Schmidt  
IPSC Operations

**IP7\_028587**

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/4/2004 9:36:15 AM  
**Subject:** Fwd: Outage Stuff

Darrell: For your information.

>>> Bruce McCann 1/31/2004 3:57:53 AM >>>  
Howard

I am the Tagging Coordinator for Outage. Any tagging requests or concerns you might have need to be directed to me so they can addressed

I will make arrangements to meet with you and go over in detail the clearances that I will make for burner removal / replacement and any other concerns you might have.

Thanks

Bruce McCann

**IP7\_028588**

**From:** Jerry Finlinson  
**To:** Howard Hamilton; James Nelson; Phil Hailes  
**Date:** 2/3/2004 6:17:12 PM  
**Subject:** Fwd: RE: ABT burner pitot photos - AMC WO NO 50633

FYI,

Here's Air Monitor's response to the photos of the IBAM manifold welding. Hopefully, they did use silver solder, not brazing.  
Sal, please advise.  
Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
jerry-f@ipsc.com

>>> Andy Chew <achew@airmonitor.com> 2/3/2004 4:34:23 PM >>>  
Jerry,

Air Monitor agreed to ABT's suggestion of using a sealing method other than Heliarc welding. Originally they mentioned brazing but we insisted on silver solder because the temperature rating of the silver solder joint is much higher than that of brazing. You should ask ABT about this but it appears they did not clean the solder joints. They may be good joints and just not look very pretty. You want to make sure they are pressure tested before going into service. When we modified the probes we only added additional Total pressure sensor holes to the production manifolds. Additional Static pressure sensor holes were determined to be not necessary as they did not improve the performance accuracy of the device. We will be providing an as built drawing which will include the pressure sensor details. Again, I am expecting to have the final burner test report anytime now and I will forward to you then.

Regards,

Andrew Chew  
Project Manager  
Applications Engineering  
Air Monitor Corporation  
Tel.: 707-521-1709  
Fax: 707-526-2825  
Email: [achew@airmonitor.com](mailto:achew@airmonitor.com)

-----Original Message-----

From: Jerry Finlinson [<mailto:Jerry-F@ipsc.com>]  
Sent: Tuesday, February 03, 2004 2:31 PM  
To: Andy Chew; Matt Maragos  
Cc: [khpquip@earthlink.net](mailto:khpquip@earthlink.net)  
Subject: Fwd: ABT burner pitot photos

IP7\_028589

I'm sending this again, since our email was down yesterday.  
We do know that

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

>>> Jerry Finlinson 2/2/2004 2:14:00 PM >>>

FYI,

We have received our first burner from ABT.

The Air Monitor pitot manifolds look nice, except for the welds.  
The T's are stainless, it seems preferable to have a nice weld rather  
than the brazing.

I'm not sure it's what you had in mind. Take a look at the enclosed  
photos.

I'd like to know how you modified the pitots inside. I can see the  
additional holes you drilled in front of the high pressure tube, but I  
can't see any additional holes on the side of the other tube. How many  
holes is it supposed to have?

Are they drilled in the backside? Please provide us a drawing of the  
as built tubes in case we ever need to order another.

Thanks, Jerry

Jerry Finlinson, Engineer  
Intermountain Power Service Corp  
850 West Brush Wellman Rd  
Delta, UT 84624  
435-864-6466 fax 0776/6670  
[jerry-f@ipsc.com](mailto:jerry-f@ipsc.com)

CC: Sal Ferrara

IP7\_028590

**From:** Howard Hamilton  
**To:** ssteede@teiservices.com  
**Date:** 2/9/2004 4:16:09 PM  
**Subject:** Fwd: Re: contractors

Darrell - For your information.

>>> Phil Hailes 2/9/2004 3:44:44 PM >>>

TEI is planning to work 2, 12-hour shifts, 7 days a week. The schedule will be 6:30 to 6:30. This is the plan for when the outage actually begins.

At present, they are working 1, 10-hour shift, 5 days a week (occasional Saturday, as-needed). This schedule is 7:00 AM to 5:30 PM.

They will inform us (Howard, Bret, Phil) if their schedule is going to change. We'll let you know as soon as we know of any changes.

>>> Richard Schmit 2/9/2004 3:16:50 PM >>>

Hello,

For Security scheduling I need to find out what kind of schedules the contractors will be working so that the gates can be properly manned.

Thanks,

Richard F. Schmit  
IPSC Operations

**IP7\_028591**



**From:** Howard Hamilton  
**To:** [ssteede@teiservices.com](mailto:ssteede@teiservices.com)  
**Date:** 2/6/2004 12:21:51 PM  
**Subject:** Fwd: RE: Gouge in Tubing to Pitot Tube

Darrell: Add this to the repair work that will need to be done to the Pitot tubes. We are in contact with ABT and should hopefully have a repair recommendation by next week.

>>> "Salvatore Ferrara" <[sal@advancedburner.com](mailto:sal@advancedburner.com)> 2/6/2004 10:02:35 AM >>>

Howard,

We advised the shop to take better care and make sure the remaining burners are checked to insure there aren't any more gouges in tubes. Heli-arc is how we would recommend fixing the gouge. You shouldn't even need a nitrogen purge with an experienced welder.

Sal

-----Original Message-----

From: Howard Hamilton [<mailto:howard-h@ipsc.com>]

Sent: Wednesday, February 04, 2004 2:45 PM

To: [sal@advancedburner.com](mailto:sal@advancedburner.com)

Cc: Jerry Finlinson; James Nelson; Phil Hailes; [ssteede@teiservices.com](mailto:ssteede@teiservices.com)

Subject: Gouge in Tubing to Pitot Tube

1/2" 316L stainless steel tubing to Pitot tube has a gouge that was done during fabrication. The gouge appears to have been made with a grinder.

The gouge is deep and appears to be through the tube wall.

TEI advises that they can run a nitrogen purge through the tubing and heli-arc the gouge.

Please review and advise.

**CC:** James Nelson; Jerry Finlinson; Phil Hailes

**IP7\_028592**

## Unit 2 Outage Walkdown 3/25/04

18<sup>th</sup> floor - Minor cleaning. IPSC will take care of it. - Bob Morris

17<sup>th</sup> floor - There are some fans, vacuum cleaners, scrap metal, some cables still to pick up. AP&F still has their lunch room and a cart or two left. Will just have them take care of everything on the 17<sup>th</sup> floor. - Gary Judkins

16<sup>th</sup> floor - a few cleanliness items to pick up. Some duct tape and some ear plug plastic, etc. IPSC will take care of it. - Bob Morris

South end east and west side, there are some wire ropes and some straps and 3 pieces of the permanent guzzler pipe that needs to be picked up. That is most likely AP&F. James Nelson will also check to see if it is TEI's. - Gary Judkins

15<sup>th</sup> floor - east and west sides, there is insulation and lagging that needs to be repaired and cleaned for several levels down on the furnace. AP&F item. - James Nelson

15<sup>th</sup> floor- the insulation and lagging for the flange manhole covers on the flash tanks need to be installed. East and west sides. - Dale Hurd

14<sup>th</sup> floor- east side, there is still some welding carts, some cutting torches, tanks, etc. They all appear to be IPSC material from backpass repairs. - Dale Hurd

14<sup>th</sup> floor - west side is TEI's tool shop and their break area. They still have all of the dispenser machines for candies and drinks. That will all be TEI's on the west side. - James Nelson

14<sup>th</sup> floor - back side, west end, all of AP&F's scaffolding planks that need to be taken care of by AP&F. - Gary Judkins

14<sup>th</sup> floor- there is a lot of electrical wire wrapped up around the sootblowers east and west sides. IPSC item. - Dale Hurd

14<sup>th</sup> floor - west back pass side there is still a ladder, tool box, cutting torch, cart, and some scaffolding and debris. That is all IPSC mechanics. - Dale Hurd

13<sup>th</sup> floor - all around the boiler will be responsibility of TEI and their subcontractors (James Nelson) except on the NE corner where the conveyor belt room is. There is some stuff there that is IPSC's responsibility. A welding cart, chair, some hoses and a little bit of debris. - Dale Hurd

Note: Yellow tape on all of the floors will be required to be taken down by the contract administrators responsible for the work in those areas.

12<sup>th</sup> floor - NW side, there is still a welding cart and some planks, etc. stuff that looks like IPSC's responsibility. - Dale Hurd

12<sup>th</sup> floor - NE side, sootblower 118, there is plywood sitting on top of the sootblower. Needs to be removed by IPSC. - Bob Morris

12<sup>th</sup> floor - scaffolding on the south side front wall is TEI item. - James Nelson

11<sup>th</sup> floor - scaffolding still left here would be a TEI item, front side. - James Nelson

11<sup>th</sup> floor - back pass side, there is a little bit of trash and debris. - Bob Morris  
A few pieces of cladding that need to be picked up. IPSC item. - Dale Hurd

11<sup>th</sup> floor - NE side in the Redler room and just outside the Redler room on the concrete needs quite a bit of cleaning and tools picked up. IPSC - Dale Hurd

10<sup>th</sup> floor - scaffolding and other material in this area is TEI's.- James Nelson

A lot of the floors that we have been passing have extension cords and power cables, and leads and some light strings that IPSC probably ought to go around and pick up before they get confiscated. - Dale Hurd

9<sup>th</sup> floor - front and rear, insulation now going on the over fire air duct work. Lots of items, lots of congestion still. All of the items on this level would be TEI responsibility. - James Nelson

8<sup>th</sup> floor - front and rear, has some debris from the over fire air project and a lot of debris and materials from the burner project. Also east and west sides on secondary air duct work needs to be cleaned and picked up when they are done. - James Nelson

8<sup>th</sup> - 5<sup>th</sup> floors - front and rear sides, around the burners. All TEI items. Quite a mess there still. - James Nelson The garbage cans that are full from floors 8 to 5 and other areas, 8 and 9 also where they are doing over fire air and burner work are the responsibilities of the contractor to throw into the dumpsters. - James Nelson

6<sup>th</sup> floor - on top of secondary air heaters, grating has been pulled off and left off around all of the sample ports on the top of the secondary air heaters. The grating needs to be reinstalled. I think this is a TEI item. I think they probably pulled them to do some of their work inside changing the baskets. - James Nelson

5<sup>th</sup> floor - behind the air heaters, north side. The concrete floor has been swept up. Piles of debris have been left that need to be cleaned up. Insulation and lagging still needs to be put on secondary air heaters where they cut out to go in and install new baskets. That is all TEI. - James Nelson

5<sup>th</sup> floor - SW side there is a bunch of the lengths of permanent guzzler piping that needs to be picked up. AP&F item. - Gary Judkins

5<sup>th</sup> floor - IPSC needs to clean up around the air heater motor and gearbox assemblies on both sides. Secondaries and primaries. - Dale Hurd

4<sup>th</sup> floor - fan rooms. A bunch of scaffolding and planks that need to be put back. TEI Contractor item. - James Nelson

4<sup>th</sup> floor - handrail on the north side has been modified somewhat. Needs to be completed. TEI contractor item. - James Nelson

4<sup>th</sup> floor - east and west sides around the feeders. A lot of clean up to be done there. That will be IPSC items. - Dale Hurd/Bob Morris

4<sup>th</sup> floor - south side is a combination of TEI and GSL. Need to clean up. Also still some fuel oil smell in that area and maybe some stains on the concrete. Need to double check and make sure that it is not a fire hazard. - James Nelson

2-1/2 floor - above D mill. There is a lot of planking, plywood, etc. that needs to be taken care of. IPSC item. - Dale Hurd

2-1/2 floor - west side, by top of E pulv. same kind of thing as D pulv on the east side. Needs to be cleaned up by IPSC. - Dale Hurd

2-1/2 floor- east and west by the bottom ash access doors. All of the scaffolding and debris needs to be picked up by TEI. - James Nelson

2<sup>nd</sup> floor - south side, all of the scaffolding and so forth is TEI. - James Nelson

South side between the second and third floors out in the open spaces north of the grating. All of the insulation, lagging, beams, and cable trays all need to be cleaned off of old insulation, etc. TEI item. - James Nelson

tlk